



**South Carolina  
Alternate Assessment  
(SC-Alt)**

**South Carolina's Alternate Assessment, SC-Alt  
Spring 2014 Operational and Field Test Administration**

**Technical Report  
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**American Institutes for Research  
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## Introduction

This report details the design, development, and spring 2014 operational and field test results for the South Carolina Alternate Assessment (SC-Alt). The SC-Alt consists of five content areas: English language arts (ELA), mathematics, science, social studies, and (high school) biology. The assessments are administered across grade-bands 3–5, 6–8, and 10.

Chapter 1: *Development of Alternate Assessment in South Carolina* describes the background of the alternate assessments in South Carolina, the format of the previous assessments, and the need for a new alternate assessment.

Chapter 2: *Test Development* describes the design of the alternate assessment and the development of tasks and items to measure academic growth among students who have significant cognitive disabilities. The Student Placement Questionnaire (SPQ), a unique feature designed to maximize the efficiency of teacher and student testing time, is described and thoroughly reviewed. The development of a vertical scale linking grade-appropriate tasks across grade levels and complexity levels within grades is described.

Chapter 3: *Spring 2014 Operational Test Administration* details the spring 2014 operational test administration in ELA, mathematics, science, social studies, and (high school) biology; test administrator training; use of the SPQ; measures taken to ensure the accuracy of scoring; and the maintenance of test security.

Chapter 4: *Performance Standards* describes the performance setting standards procedures employed for SC-Alt.

Chapter 5: *Technical Characteristics and Interpretation of Student Scores* reviews technical topics including analysis and scaling, reliability of test scores, the procedures used to calculate internal consistency reliability estimates, and classification accuracy estimates.

Chapter 6: *Score Reports* describes the score reporting system for SC-Alt with emphasis on the Individual Student (Family) Report (see Appendix F) from which the summary reports are derived, the information contained in the various reports, and their intended uses.

Chapter 7: *Student Performance Data from the Spring 2014 Administration* provides an overview of statewide achievement on the SC-Alt, based on the spring 2014 operational test administration.

Chapter 8: *Validity* reports on content validity and convergent and discriminant validity topics as well as the validity of the SPQ and the operational performance of the tailored assessment under the SPQ's start and stop rules.

## **Chapter 1: Development of Alternate Assessment in South Carolina**

### **Overview of the State Assessment System**

The South Carolina Assessment System includes the South Carolina Palmetto Assessment of State Standards (PASS), the High School Assessment Program (HSAP), and the End-of-Course Examination Program (EOCEP). These state-level assessments are required by the Education Accountability Act of 1998 (EAA) as amended in May 2008 and are aligned with the state's academic standards for each subject and grade level.

- PASS measures the performance of all public school students in grades 3–8 in the content areas of ELA, mathematics, science/biology, and social studies.
- HSAP measures the performance of high school students in ELA and mathematics and is used both as one criterion for eligibility to receive a high school diploma and as the primary source for reporting the federally mandated data required by the No Child Left Behind Act (NCLB).
- EOCEP is administered in gateway courses at the high school level. The Biology EOCEP examination is counted for participation purposes for NCLB reporting.
- In order to allow SC-Alt scores to be aggregated with the scale scores for the high school general assessments for use in the SC ESEA Accountability system, HSAP/EOCEP scores are also computed for middle school students in 2014.

The EAA establishes a performance-based accountability system that includes all students. This act supports South Carolina's commitment to public education and a conviction that high expectations for all students are a vital component of improving academic education.

The goals of the state assessment system are as follows:

- Increasing academic performance of all children and, ultimately, raising high school graduation rates
- Implementing rigorous academic achievement standards that are aligned with the South Carolina curriculum standards
- Improving instruction based in part on the implementation of these higher standards
- Using the results of challenging assessments that measure student performance relative to these standards

Another goal is to inform various audiences—teachers, school administrators, district administrators, South Carolina State Department of Education (SCDE) staff, parents, and the public—of the status of academic performance and of the progress of public school students toward meeting South Carolina's academic achievement standards.

The South Carolina academic standards form the basis for alignment across the state education system for district and school curricula, classroom instruction, units of study, and learning

experiences. **The academic standards are the basis for all assessments in the state assessment system, including the alternate assessment.**

## **Purpose of the South Carolina Alternate Assessment**

The purpose of the alternate assessment based on alternate achievement standards is to capture and evaluate the performance of students who have traditionally been excluded from statewide testing programs and to improve instruction for these students by promoting appropriately high expectations and the inclusion of these students in state accountability for district report cards and for adequate yearly progress (AYP) reporting at the school, district, and state levels.

## **Description of the South Carolina Alternate Assessment**

The SC-Alt is administered to students who have been determined by the Individualized Education Program (IEP) team to be unable to participate in the general state assessments even with appropriate accommodations. It is an alternate assessment on alternate achievement standards to the PASS for students in grades 3–8 and the HSAP and Biology EOCEP for high school students.

The test is administered to students who meet the participation criteria for alternate assessment and who are of the ages of typical students in grades 3–8 and 10. Students who are ages 8–13 (the typical ages for grades 3–8) are assessed in ELA, mathematics, science, and social studies. Students who are 15 (the typical age of students in grade 10) are assessed in ELA, mathematics, and biology.

The SC-Alt consists of a series of performance tasks that are scored by the test administrator (teacher) as they are administered. The performance tasks are scripted activities, and each task contains four to eight related items. The items have a scaffolded scoring script to reduce the complexity of the item when students do not respond successfully on the first attempt. All items are linked to the South Carolina academic content standards through the SC-Alt Extended Standards. The Extended Standards are linked explicitly to the South Carolina academic standards for grades 3–8 and 10, although at less complex or prerequisite levels. The SC-Alt has three forms: elementary, middle, and high school. Students' assignment to forms is based on their age on September 1 of the tested year; 8- to 10-year-olds take the elementary form, 11- to 13-year-olds take the middle school form, and 15-year-olds take the high school form.

The assessment is designed to minimize the teacher and student testing burden by administering only those items that are well-suited to a student's achievement level. The test administrator completes an SPQ to determine the most appropriate starting task for the student. Tasks are arranged in ascending order of difficulty. Once the appropriate starting task is identified, test administrators continue to administer tasks until the student can no longer respond successfully.

The first operational administration of the SC-Alt was conducted during a seven-week testing window during spring 2007 in ELA, mathematics, and science. A census field test was conducted during the same assessment window for social studies. In 2009, 2011, 2012, and 2013, embedded field test items in ELA, mathematics, science, and social studies were administered together with the operational assessment. In 2014, embedded field test items were administered in science and social studies. Also in 2011, high school biology was introduced as an operational assessment. Since 2012, there were two relatively minor changes in form building: the high

school biology assessment included 12 operational tasks and 3 field-test tasks, and its start points were adjusted to be consistent with the other subjects. Linking tasks were still administered in two adjacent grade-bands during 2012, but they were scored operationally only in the lower grade-band. In 2013, each form had 12 operational and operational field-test tasks and 3 field-test tasks; common tasks existed between ELA grades 3–5 and 6–8 forms, and math grades 6–8 and 10 forms, respectively; there was only one vertical linking task in the adjacent grade-bands. In 2014, both ELA and Mathematics have 12 operational tasks in each form and science/biology and social studies have 15 tasks, with 8 operational tasks, 4 operational field-test tasks, and 3 field-test tasks in each form. No linking tasks exist in each form. Documentation related to the 2014 operational administration is the focus of this technical report.

## **Background on Alternate Assessment Development in South Carolina**

The 1997 amendments to the Individuals with Disabilities Education Act (IDEA '97) created the mandate to include all children, including children with significant disabilities, in state testing and accountability systems. The vision for the South Carolina alternate assessment system was initiated in early 1998 in response to the IDEA '97 regulations. This vision has driven the development and revision of alternate assessment in South Carolina.

A core team of staff from the SCDE Offices of Exceptional Children, Assessment, Research, and Curriculum and Standards met in March 1998 to develop a plan for designing an alternate assessment to meet the IDEA '97 mandate and to be included in the state assessment system. The team's first steps were to convene a steering committee and seek technical assistance from the Mid-South Regional Resource Center (MSRRC) to explore strategies for designing an alternate assessment.

The Alternate Assessment Steering Committee convened on May 12, 1998, to assist SCDE in determining how to include students with significant cognitive disabilities in statewide assessments. The committee comprised parents, special education and general education teachers, administrators, and representatives from other agencies. Dr. Ken Olsen of MSRRC provided the committee with technical assistance, including information on IDEA '97 requirements, examples of options that some states were using or considering, and research available on alternate assessment. He facilitated a process that allowed the Steering Committee to reach shared foundational beliefs, address eligibility criteria and content and performance standards, and develop plans.

To ensure that all students, including students with significant disabilities, are included in the testing and accountability systems and have appropriate access to instruction in the South Carolina academic standards, the Steering Committee determined that the alternate assessment would be based on the following principles:

- All children can learn, be expected to meet, and be challenged to meet high standards.
- Special education is an extension and adaptation of the general education program and curriculum, rather than an alternate or separate system.
- The South Carolina State Board-approved standards are the foundation for all students, including students with unique needs and abilities.

- Measurement and reporting must be defensible in terms of feasibility, validity, reliability, and comparability.
- Results of the state standards-based program must be used to improve planning, instruction, and learning.
- An alternate assessment is appropriate for the few students for whom the state assessment, even with accommodations, is not appropriate.
- The alternate assessment is designed for a diverse group of students and should be flexible enough to address their individual needs.

The committee articulated these goals for the alternate assessment:

- Provide evidence that the student has acquired the skills and knowledge necessary to become as independent as possible
- Document the student's performance and the performance of the programs serving the student
- Merge instructional best practice, instruction in state standards, and assessment activities
- Provide information in the development of curriculum that is responsive to the student's needs

The Steering Committee created the following participation guidelines to guide IEP team decisions regarding students who should participate in the alternate assessment:

- The student demonstrates significant cognitive disabilities and adaptive skills, which result in performance that is substantially below grade-level achievement expectations even with the use of accommodations and modifications.
- The student accesses the state-approved curriculum standards at less complex levels and with extensively modified instruction.
- The student has current adaptive skills requiring extensive direct instruction and practice in multiple settings to accomplish the application and transfer of skills necessary for application in school, work, home, and community environments.
- The student is unable to apply or use academic skills across natural settings when instructed solely or primarily through classroom instruction.
- The student's inability to achieve the state grade-level achievement expectations is not the result of excessive or extended absences or social, cultural, or economic differences.

NOTE: The term "significant cognitive disabilities" was added by the South Carolina Alternate Assessment Advisory Committee to the criteria after the passage of the NCLB December 2003 regulations on alternate assessment.

The Steering Committee recommended that the state develop a portfolio collection of evidence of student progress toward the South Carolina academic standards similar in design to the Kentucky Portfolio Alternate Assessment. The committee also recommended that SCDE prepare

a Request for Proposal (RFP) for a contractor to develop the alternate assessment. Advanced Systems in Measurement and Evaluation Inc. (ASME), which later became Measured Progress, was awarded the contract. This company, along with the Inclusive Large Scale Standards and Assessment (ILSSA) project at the University of Kentucky, began work with SCDE on the design of the Palmetto Achievement Challenges Test-Alternate (PACT-Alt).

A work group was convened to define the domain for instruction and assessment. To ensure that the South Carolina curriculum standards were the foundation for all students, including students with unique needs and abilities, the work group developed adaptations of the curriculum standards. The work group comprised special education teachers, regular education teachers, parents, administrators, higher education personnel, representatives from community agencies, and SCDE personnel. The work group process, which was facilitated by staff from MSRRC, focused on the prerequisite skills found primarily in the curriculum standards in prekindergarten through grade 2.

The work group affirmed that special education services must operate as an extension of the general education program and curriculum rather than as an alternate or separate system. The standards in this initial document were identified as concepts that every student, including students with moderate to severe disabilities, should know or be able to perform. These selected standards, which focused on skills that were deemed essential and attainable for every student, were directed toward the following goals:

- Enhancing the quality of students' communication skills
- Improving the quality of students' everyday living
- Improving students' ability to function in society and promoting in them an acceptance of and respect for self and others
- Preparing students for transition into adult living
- Moving students toward independence, which may range from a level of self-care with assistance to total self-sufficiency

The extensions were based on the state academic content standards in prekindergarten through grade 2. For each selected standard, examples of essential real-world performance skills were developed. The articulation of these performance skills was designed to provide the rationale for teaching the standards and to serve as guides for teachers and parents regarding how the student demonstrated a skill. The committee specified that these performance skills could be accomplished in home, school, and community environments through a variety of individualized communication systems and might incorporate a variety of supports, such as physical assistance, physical prompts, verbal prompts, and technology. The document *The Extensions and Adaptations of the South Carolina Curriculum Standards for Students Participating in Alternate Assessment* became the focus of the portfolio assessment process, HSAP-Alt performance tasks, and professional development training. In 2002, this document was revised and renamed the *Resource Guide to the South Carolina Curriculum Standards for Students in Alternate Assessment*, but it was still aligned to curriculum standards for prekindergarten through grade 2. This work was based on the IDEA '97 requirements and the thinking at the time about how

students with significant cognitive disabilities should be included in the general education curriculum and assessment.

Beginning with the 2000–2001 school year, students in grades 3–8 who met the participation criteria for alternate assessment were assessed with the portfolio assessment PACT-Alt. In 2003, the high school assessment HSAP, which was designed to meet AYP requirements, was added to the state assessment system, and an alternate to HSAP was developed to measure student proficiency in ELA and mathematics. A Stakeholder Committee with expertise in high school instruction of students with significant cognitive disabilities and academic standards was convened to guide the development of the high school alternate assessment, HSAP-Alt. The committee recommended designing an assessment based on performance on a series of tasks linked to the state curriculum standards. The HSAP-Alt consisted of a series of scripted performance tasks in ELA and mathematics with scaffolded administration and scoring procedures aligned with the *Resource Guide to the South Carolina Curriculum Standards for Students in Alternate Assessment*.

One critical piece of the development and implementation process of PACT-Alt and HSAP-Alt was the provision of intensive professional development related to standards-based instruction, much of it based on the work of Harold Kleinberg and Jacqui Farmer Kearns. A resource for professional development was their book *Alternate Assessment: Measuring Outcomes and Supports for Students with Disabilities*. Professional development was essential to the implementation of the portfolio assessment because the teacher was responsible for teaching the student the content related to the academic standards, assessing the student’s progress, and providing evidence of the instruction and progress in the portfolio. Prior to the implementation of the alternate assessment and the IDEA ’97 requirement to include students with disabilities in the general education curriculum, many students with disabilities, especially those with significant disabilities, and their teachers had been excluded from standards-based instruction and professional development related to academic standards.

### **Transition from PACT-Alt and HSAP-Alt to SC-Alt**

After seeking input on the vision of a new alternate assessment on alternate achievement standards from the Advisory Committee and teachers who were conducting alternate assessment, SCDE wrote an RFP for the redesign or design of the alternate assessment system. The design was to be consistent with South Carolina’s commitment to the instruction and assessment of students with significant cognitive disabilities and NCLB requirements. The focus was to be on grade-level academic standards. The new system was to address concerns related to teacher burden and time involved in assessment while supporting improved instruction based on state academic achievement standards. Extensive training for test administrators was to be integrated into the design of the assessment.

In September 2004, a contract was awarded to American Institutes for Research (AIR) to assist the state in revising the alternate assessment. AIR managed the administration and analyses of the PACT-Alt and HSAP-Alt assessments during the 2004–2005 and 2005–2006 school years while developing the new alternate assessment, the South Carolina Alternate Assessment (SC-Alt), with SCDE.

## **American Institutes for Research**

AIR has more than 50 years of experience as a nonprofit organization dedicated to assessment, behavioral science, and educational research. AIR developed the South Carolina HSAP and the EOCEP programs and has enjoyed a successful collaboration with SCDE for a number of years.

## Chapter 2: Test Development

The South Carolina academic content standards are the basis for alignment across the state for district and school curricula, classroom instruction, units of study, and learning experiences. The curriculum standards are the basis for the PASS, the HSAP, the EOCEP, and the alternate assessment. An initial step in the design of the alternate assessment was developing Assessment Standards and Measurement Guidelines (ASMGs).

### Development of the Assessment Standards and Measurement Guidelines

In April 2005, a committee comprising South Carolina special education teachers, content specialists, SCDE staff, and AIR staff designed the ASMG document to support the new assessment development. The process involved extending the state academic standards in ELA, mathematics, science, and social studies in grade-bands 3–5, 6–8, and 10 to be accessible to students with significant cognitive disabilities. This document replaced the *Resource Guide to the South Carolina Curriculum Standards for Students in Alternate Assessment*.

The ASMGs were the foundation for the development of the assessment tasks for the SC-Alt. The ASMGs in each content area are distillations of the essence of South Carolina curriculum standards at each grade level.

Each content area committee reviewed the large array of standards and prioritized those in grade-bands 3–5, 6–8, and 10 that they deemed most important to students now and in the future. They then reduced the complexity of these standards, while retaining the essence of the grade-level content knowledge and skills, to make the academic standards appropriate and accessible for students with significant cognitive disabilities. The committee was careful to address both the depth and the breadth of the academic standards and used professional judgment based on experience with the population and the content to determine the standards to be assessed. The resulting document provided the link to the grade-level standards and indicators in the state academic standards. The measurement guidelines gave task writers and teachers the specificity necessary to translate the assessment standards into assessment tasks and items and classroom instruction. A list of individuals who were involved in this process is included in each ASMG content document.

**NOTE:** The ELA 2005 committee recommended that the standards in the Research Goal not be included in the assessment standards. The rationale for this recommendation was that this goal was not tested to any great extent in PACT because this content is primarily taught and assessed at the classroom level. Committee members, however, indicated that the Communication Goal included standards that they deemed very important to this population, and they recommended including assessment standards for this strand.

The South Carolina State Board of Education adopted revised ELA and mathematics academic standards in August 2007 and May 2008. The South Carolina State Board of Education required replacement of the high school physical science end-of-course assessment for all students with a biology end-of-course assessment. The adoption of these revised standards, which occurred outside the cyclical review timetable, and the replacement of the physical science end-of-course assessment with the biology end-of-course assessment had a direct impact on the ongoing schedule for developing additional tasks for the task pool.

During the 2007 and 2008 school years, committees of special educators and general educators met to extend the revised ELA, mathematics, and science academic standards, as well as the biology standards. These documents were designed to provide specificity for instruction as well as assessment, so the committees extended all standards and indicators including those for non-tested grades. These documents, referred to as the Extended Standards, replaced the ASMGs in ELA, mathematics, and science and provided extensions for biology. The Extended Standards provide extensions for all grade levels, including those that are not tested, and guidance to assist educators with instructional access to the state academic standards.

## **Stakeholder Input into the Development of the SC-Alt**

To ensure the validity of the overall assessment process, a great deal of time and effort was spent obtaining input from various sources, including the State Alternate Assessment Advisory Committee, classroom teachers, parents, and other agency personnel.

### **South Carolina State Alternate Assessment Advisory Committee**

The State Alternate Assessment Advisory Committee meets to provide oversight to the SC-Alt. The committee includes members of the original Alternate Assessment Steering Committee and the High School Stakeholder Committee. The committee also includes parents, special educators, and representatives of higher education, content specialists, special education directors, and district test coordinators. Additional members include representatives from the Department of Disabilities and Special Needs, the University of South Carolina School of Medicine, the South Carolina Assistive Technology Project, the South Carolina Interagency Deaf-Blind Project, the Autism Society of South Carolina, and Pro-Parents of South Carolina.

The Advisory Committee provided input on its expectations for the revised alternate assessment during the first meeting with the contractor, AIR, on November 5, 2004. SCDE and AIR staff reported each step of the development process to the Advisory Committee at each meeting and sought its advice and recommendations.

### **Early Development Activities**

At the recommendation of the Advisory Committee, AIR item writers visited classrooms in South Carolina during January and February 2005 to observe teaching strategies and materials that were in use. They also reviewed PACT-Alt portfolios for examples of evidence that teachers used to demonstrate progress toward proficiency on grade-level standards and examined the characteristics of the HSAP-Alt performance event in order to build on the existing system.

Teacher focus groups convened during January 2005 and obtained feedback from teachers on the types of tasks they believed were appropriate, the protocol format they preferred, and the materials they recommended for inclusion in the assessment.

Qualified item writers employed by AIR were trained to write tasks and items specifically aligned with the ASMGs. Item writing teams included AIR staff with expertise in the content areas; alternate assessment specialists; and consultants in the areas of instruction of students who are blind and visually impaired, students who are deaf and hard of hearing, and students with cognitive disabilities.

On February 14, 2006, prior to the development of science and social studies tasks, SCDE staff and the AIR alternate assessment specialist provided additional training to the writing teams. The training was based on *Designing from the Ground Floor*, materials developed by the National Alternate Assessment Center (2005).

Consideration of universal design was a focus throughout the development process. Items, including passages and response options, were developed to use objects, pictures, picture symbols, words, and numbers. Several tasks in all four content areas and at different levels of complexity were piloted with South Carolina teachers and students in March and May 2005. AIR staff then interviewed the pilot teachers to determine the item characteristics and parameters that teachers believed worked well or did not work.

### **Summary of the Development and Review of the Original SC-Alt Tasks**

- The task and item development process began with the creation of task kernels. AIR was primarily responsible for the majority of task kernels, with input from SCDE and teachers in South Carolina. Task kernels are basic ideas for an assessment activity, stimulus materials, and purpose, which, based on their relation to the South Carolina ASMGs, were used to develop a task and its items.
- SCDE reviewed the task kernels and provided feedback to AIR on which kernels were acceptable, which were unacceptable, and which needed revision. These reviews included alignment with the ASMGs.
- AIR item writers developed the items and stimulus materials. These items were reviewed internally by the content experts for clarity, quality, and alignment with the ASMGs.
- Following the comprehensive AIR internal review, the tasks and items underwent technical review by AIR to ensure that the items were properly keyed and scaffolded, the instructions were appropriate, the stimulus materials were interpretable, and the items were generally consistent in design with other tasks and items under development.
- Items that passed internal review by the AIR development staff were reviewed by the senior content lead for each content area and the senior alternate assessment specialist. This review ensured that within the content area, tasks and items followed the design of the assessment and were consistent with respect to format, presentation, and general administration procedures.
- Before items were passed to SCDE, the project director reviewed all items to ensure that they were consistent with the foregoing factors across content areas and grade-bands.
- Following the final internal AIR review, items were passed to SCDE for its review. During this process, SCDE staff, including content specialists, special educators, and assessment specialists, provided feedback to AIR on the design of the tasks and items, the alignment of items to the ASMGs, and the appropriateness of the items for use in South Carolina. Some items were revised by SCDE to improve alignment with the ASMGs.
- Approved items were placed into tasks for a small-scale tryout, conducted by AIR with the assistance of teachers in South Carolina and Northern Virginia and AIR staff. These tryouts provided invaluable information regarding the clarity of instructions, the utility of

the stimulus materials, and the success of the items and tasks in producing expected responses. Items that showed obvious problems were revised or discarded.

- After changes were made to the prototypes as a result of the pilots and tryouts, a committee of South Carolina teachers was convened on July 12, 2005, to review the revised tasks and provide further input and recommendations.

## **Content, Bias, and Sensitivity Reviews**

Once small-scale tryouts were concluded, AIR, SCDE, and educators in South Carolina reviewed the tasks and items for alignment with the ASMGs and for bias and sensitivity concerns. The reviews for content and bias and sensitivity were combined because of the direct impact of the task format, materials, and language on the assessment accessibility for the population. Committees comprising teachers of students with significant cognitive disabilities, representatives of higher education, special education administrators, experts in the instruction of students with limited English proficiency (LEP), and content experts from across the state participated in these reviews to consider the following:

- Alignment to the ASMGs and Extended Standards
- Bias for specific groups and types of disabilities
- Accessibility of the tasks to the entire population for whom the test was designed
- Characteristics that might lead to bias or are inappropriate for or insensitive to the nature of the student subgroups (e.g., exclusionary language, stereotypes)
- Format and content of the tasks
- Accessibility of materials
- Clarity of instructions and ease of administration

The review committee meetings were conducted in November 2005, May 2006, and, for the spring 2009 embedded field test, in November 2008. For the 2010 biology field test, the content and bias and sensitivity review meetings were held in June 2009. For the 2011 to 2014 assessments, the committee reconvened in July of the year prior to the test administration in order to review newly developed field-test tasks. During the reviews, committee members recommended that some items be revised or eliminated.

## **Development of Field-Test Tasks and Forms**

- On the basis of the feedback from all the steps above, AIR conducted a final review and sign-off for all items and tasks. Following this review, the items and tasks were affirmed ready for field testing.
- Prior to assembling tasks into test forms, the senior content lead for each content area and the project director reviewed the items and tasks a final time to determine whether the revisions were appropriate and maintained the alignment of the item to the targeted standard.

- For stand-alone field tests, tasks and their items were then placed into field-test forms consistent with the specifications described earlier. For embedded field tests, the tasks and their items were placed into designated locations on the operational test forms.

### **Item Data Review**

- After field testing, AIR and SCDE staff, including alternate assessment specialists, psychometricians, content specialists, and special educators, met to review the field-test statistics.
- They reviewed the statistics associated with each item and task to determine whether the items were functioning within expectations and whether the tasks were appropriately placed within the instrument. The statistical criteria applied to the field-test item data and to the operational item data are described in Chapter 5.
- The committee also considered teacher comments on specific items from the field test, data from field-test observations, and the results of the alignment studies to make decisions about the inclusion of items in the operational assessment.
- The committee decided if an item was to be dropped or revised for recalibration.
- The item data review meetings for the original independent field tests were conducted in August 2006 and June 2007. The item data review of the 2010 independent biology field test was held in July 2010. The other administrations after 2007 used an embedded field-testing approach. For the embedded field tests, item data reviews were conducted in 2008 for social studies, in 2009, 2011, 2012, and 2013 for ELA, mathematics, science and biology, and social studies, and in 2014 for science/biology and social studies.

### **Development of Operational Task/Item Pool**

- AIR once again reviewed all data associated with the tasks and items to determine whether the items were functioning as expected and were useful for measuring the achievement of students in South Carolina.
- Items that survived all reviews were placed into the operational task/item pool.

### **Design and Development of the 2006–2014 SC-Alt Field Tests**

Following the task development process, the field-test forms were designed and produced. The primary purposes of the independent field-test administrations for ELA and mathematics (spring 2006), science (fall 2006), and social studies (spring 2007) were to produce data to evaluate SC-Alt tasks and items and to guide the assembly of operational test forms to be used in 2007 and beyond. Student scores based on field-test data were not reported.

An embedded field test (spring 2008) tested the symbolate version of the social studies task “George Washington” so that its performance could be compared with the text version used in the spring 2007 field test.

The design, data collection, and analysis of the independent 2006 and 2007 field tests in ELA, mathematics, science, and social studies, of the 2008 embedded social studies field-test tasks, of the 2009, 2011, 2012, and 2013 embedded field-test tasks in ELA, mathematics, science, and

social studies, and of the 2014 embedded field-test tasks in science/biology and social studies were discussed in the spring 2007, 2008, 2009, 2011, 2012, 2013 operational technical reports and in this technical report.

## **Development of the High School Biology Assessment**

During spring 2010, concurrently with the operational SC-Alt administration, 21 new high school biology tasks were field-tested on 15- and 16-year-old students eligible for alternate assessment. The biology field test was administered to 472 students on two forms of 12 tasks each. The forms were linked by three shared tasks, which allowed all biology items to be calibrated on the same scale.

The item response theory (IRT) parameters, classical item statistics, and fit and differential item functioning (DIF) statistics were subjected to an item data review conducted with AIR and SCDE staffs on July 20, 2010. A standard setting workshop based on the biology field-test data was conducted on September 14 and 15, 2010. Biology has been administered operationally beginning with the spring 2011 assessment.

## **Use of the Student Placement Questionnaires**

The SPQs are brief structured rating instruments that represent the range of communication levels and cognitive-academic functioning found in the population of alternate assessment examinees. AIR developed the SPQ for the SC-Alt program.

The student placement process is intended to achieve several important goals:

- It matches student achievement levels with the difficulty of the tasks and items that are administered.
- It allows a maximum number of student item responses at an appropriate level of difficulty.
- It minimizes fatigue by targeting the assessment to the student.
- It supports the psychometric rigor of student scores. A student is administered a better targeted test than one that contains many items the student might find too easy or too difficult. Better test targeting contributes to better score reliability. Because fatigue effects from the student's limited attention span are reduced, the validity of the overall assessment is enhanced.

Teachers completed the SPQs in each content area to identify the most appropriate starting task for each student. For each subject, the SPQs prompted the teacher with 12–15 “can do” questions (e.g., can this student recognize the sun/moon/Earth?). The questions were grouped by major content standards and sampled across low-, moderate-, and high-complexity levels. Each question rated the student's functioning on a 4-point scale, valued 0 to 3. Answering the 12–15 questions of each SPQ, summing the total score, and identifying the most appropriate starting task in a lookup table took test administrators approximately six or seven minutes.

The lookup table identified ranges of SPQ scores that corresponded to one of three starting tasks. Teachers used the SPQs to assign students to starting points on the assessment. Cut points for the

science SPQ were based on the rules derived for the mathematics SPQ but were altered for the number of items on the science SPQ. Details regarding the student participation, analysis, and conclusions drawn from use of the SPQ placement procedure appear below.

**Administration: Placement and Stopping Rules**

After teachers identified the most appropriate starting task for a student, they followed several rules as they administered the starting task and subsequent tasks. For ELA and mathematics, if starting at task 1, the teacher would administer at least six tasks; otherwise, at least seven tasks would be administered. For science/biology and social studies, if starting at task 1, the teacher would administer at least seven tasks, including at least six tasks that were operational or operational field tasks in 2014; otherwise, at least nine tasks would be administered, including seven operational or operational field tasks. Exhibit 2.1 lists the number of tasks that were used in 2014 final scoring. For detailed placement and stopping rules for the spring 2014 administrations, see Appendix A.

**Exhibit 2.1. Number of Tasks Used in Scoring**

Subject	Grade-Band	Starting Task	Tasks Used in Scoring
ELA	3–5	Task 1–6	6
		Task 3–9	7
		Task 6–12	7
	6–8	Task 1–6	6
		Task 3–9	7
		Task 6–12	7
	10	Task 1–6	6
		Task 3–9	7
		Task 6–12	7
Math	3–5	Task 1–6	6
		Task 3–9	7
		Task 6–12	7
	6–8	Task 1–6	6
		Task 3–9	7
		Task 6–12	7
	10	Task 1–6	6
		Task 3–9	7
		Task 6–12	7
Science	3–5	Task 1–7	6
		Task 3–11	7
		Task 7–15	7
	6–8	Task 1–7	6
		Task 3–11	7
		Task 7–15	7

Subject	Grade-Band	Starting Task	Tasks Used in Scoring
Biology	10	Task 1–7	6
		Task 3–11	7
		Task 7–15	7
Social Studies	3–5	Task 1–7	6
		Task 3–11	7
		Task 7–15	7
	6–8	Task 1–7	6
		Task 3–11	7
		Task 7–15	7

### SPQ Summary

The previous discussion describes some of the implementation procedures for the SPQ. Here we review two of the technical characteristics of the SPQ: the method used to select the SPQ-recommended starting task and the usefulness of the SPQ as an indicator of student starting task.

The technical development of the SPQ and determination of the cut points to determine starting tasks are fully described in AIR’s *South Carolina Alternate Assessment (SC-Alt): Technical Report for English Language Arts and Mathematics Field Test Administration, Spring 2006* (2008).

*Usefulness of the SPQ for Determining the Starting Task.* AIR has gathered information regarding the agreement between the SPQ-recommended start points and the final observed start points by reviewing item data following each operational administration. The results of the 2014 data are reported in detail in Chapter 8.

Use of the SPQ pre-assessment score is only the first step in the procedure used by the test administrator in determining where the student should start the assessment. The instructions for using the SPQ include procedures requiring teachers to adjust the starting point below the SPQ-recommended start point when the student is not successful on the first administered task. Alternately, after reviewing the assessment, some teachers may determine that a student needed to start at a higher level than recommended by the SPQ.

The results of the 2014 study indicate that the agreement between the SPQ-recommended start point and the observed start point by content area was about 94% for ELA, 93% for mathematics, 91% for science, 91% for biology, and 92% for social studies. Since the test administrator is required to make adjustments based on the student’s success on the first task and these adjustments are reflected in the agreement rates, the SPQ appears to be working effectively for targeting the first task to begin the assessment process.

The results of the Start-Stop Analysis reported in Chapter 8 also support the effectiveness and validity of the SPQ and the SC-Alt tailored assessment design.

## Teacher Scoring Accuracy

The design of the SC-Alt includes test administrator (teacher) scoring of student responses. The degree of accuracy with which the test administrator evaluates student performance determines whether the student receives the correct scores and the correct performance level.

A second rater study was conducted during the 2014 administration to confirm that test administrators were following all scoring procedures accurately. For this study, scoring accuracy refers to the degree to which teachers follow scaffolding and scoring directions correctly and assign correct scores to student responses. In the second rater study, scoring accuracy by the test administrators was evaluated by having another trained rater present during the test administration who scored the student responses simultaneously with the test administrator. After the raters concluded their scoring of the student responses, the consistency between the test administrators and the second rater observers was determined.

Detailed results of the scoring consistency analysis are presented in Appendix B. The results indicated that there was a high degree of consistency between the scoring of the test administrators and the second rater observers, suggesting that test administrators in South Carolina understood the scoring procedures and implemented them accurately when scoring student responses.

## 2014 Operational Test Booklets and Administration and Scoring Procedures

For each grade-band test form in each content area, tasks and items were selected that met the statistical criteria and that covered the breadth of the targeted Extended Standards. The 2014 operational test forms in ELA, mathematics, science/biology, and social studies include embedded field-test tasks in each grade-band form. In addition, operational field-test tasks are included in the elementary and middle school forms of ELA, the middle school form of math, and elementary school form of social studies. All operational forms had their tasks ordered by increasing difficulty of the items in each task, which was determined by IRT analysis. The goal was to use technically sound assessment instruments to support valid inferences about what students know and can do relative to the Extended Standards in each content area.

The SC-Alt operational administration in spring 2014 included three sets of test materials in ELA, mathematics, and science/biology: one for the grade-band 3–5 assessment, one for the grade-band 6–8 assessment, and one for the grade 9–10 assessment. The social studies assessment used two sets of materials, one each for grade-bands 3–5 and 6–8 (grades 9–10 are not part of the social studies assessment). Similarly, science was administered only in grade-bands 3–5 and 6–8, while the grades 10 science assessment of previous administrations was replaced by biology. Test administrators (teachers) received a *Test Administration Manual (TAM)* and comprehensive training based on the manual and the test materials.

Exhibit 2.2 lists the number of tasks of each task role in each 2014 spring operational form. It shows that the 2014 test booklets contained 12 operational tasks in ELA and mathematics tests and eight operational tasks, four operational field-test tasks, and 3 field-test tasks in science and social studies tests. Operational tasks are arranged in the order of the task empirical difficulties. No linking tasks exist in 2014 forms. Each task consisted of 4–8 items.

Teachers were instructed to administer a minimum of 6–7 operational and operational field-test tasks for scoring to each student, depending on the SPQ-designated starting point, and to continue administration of subsequent tasks until the student was no longer successful or reach the end of the form.

**Exhibit 2.2 Numbers of Operational, Operational-Field-Test, and Field-Test Tasks in Each Grade-Band Assessment, 2014**

Subject	Grade-Band	Total # of Tasks	Operational	Operational Field Test	Field Test
ELA	3–5	12	12	0	0
	6–8	12	12	0	0
	10	12	12	0	0
Mathematics	3–5	12	12	0	0
	6–8	12	12	0	0
	10	12	12	0	0
Science	3–5	15	8	4	3
	6–8	15	8	4	3
Biology	10	15	8	4	3
Social Studies	3–5	15	8	4	3
	6–8	15	8	4	3

Teachers also received other materials with each test booklet:

- Physical manipulatives
- Printed manipulatives
- An answer folder for each participating student
- A SPQ and directions for determining the starting task for each student (included in the answer folder)

The approximate operational form length for each grade-band assessment for the 2014 administration is 60 items (12 tasks times an average of 5 items per task) and 120 score points (60 items times an average of 2 points per item).

### Linking Tasks in Each Grade-Band Assessment

All tasks in each SC-Alt grade-band assessment are aligned to the extended standards in that grade-band. Because adjacent grade-band score scales were linked psychometrically for ELA and mathematics, some tasks were used as linking tasks in each grade-band assessment that aligned with the extended standards in both adjacent grade-bands in previous years. All items in linking tasks were designed to be appropriate for students in both adjacent grade-bands.

Since vertical scales have been well established over the years, no linking tasks exist in 2014 forms for all subjects.

## Chapter 3: Spring 2014 Operational Test Administration

This section describes the spring 2014 operational test administration in the following areas:

- Student participation for the spring 2014 administration
- Demographics of participating students
- Test administration window, materials, and timelines
- Test administrator requirements
- Test administrator training
- Pre-assessment using the SPQ
- Fidelity of administration and accuracy of scoring
- Test security provisions

### Student Participation for the Spring 2014 Administration

Students participating in the spring 2014 operational administration were those students whose IEP team had determined that they met the following SC-Alt participation criteria for alternate assessment and who were ages 8–13 or 15 on September 1, 2013. These are the ages of typical students who are in grades 3–8 and 10.

- The student demonstrates a significant cognitive disability and adaptive skills that result in performance substantially below grade-level achievement expectations even with the use of accommodations and modifications.
- The student accesses the state-approved curriculum standards at less complex levels and with extensively modified instruction.
- The student has current adaptive skills requiring extensive direct instruction and practice in multiple settings to accomplish the application and transfer of skills necessary for application in school, work, home, and community environments.
- The student is unable to apply or use academic skills across natural settings when instructed solely or primarily through classroom instruction.
- The student's inability to achieve the state grade-level achievement expectations is not the result of excessive or extended absences or social, cultural, or economic differences.

Exhibit 3.1 indicates the age ranges of students who participated in the SC-Alt in spring 2014.

Exhibit 3.2 indicates the alternate assessment eligibility categories that were placed in each eligible student's state precoding file (precoding files enabled SCDE and AIR to ensure that the appropriate SC-Alt materials were delivered to teachers in time for the spring 2014 administration).

**Exhibit 3.1: Age Reference Sheet for Spring 2014 Operational Administration**

Age as of 9/1/13	Corresponding Birth Date Range		Test Required 2013–2014	Precode AA Eligibility Code
	Beginning DOB	Ending DOB		
5	9/02/07	9/01/08	None	5
6	9/02/06	9/01/07	None	5
7	9/02/05	9/01/06	None*	5
8	9/02/04	9/01/05	SC-Alt Elem	2
9	9/02/03	9/01/04	SC-Alt Elem	2
10	9/02/02	9/01/03	SC-Alt Elem	2
11	9/02/01	9/01/02	SC-Alt Middle	3
12	9/02/00	9/01/01	SC-Alt Middle	3
13	9/02/99	9/01/00	SC-Alt Middle	3
14	9/02/98	9/01/99	None	5
15	9/02/97	9/01/98	SC-Alt HS	4
16	9/02/96	9/01/97	None*	5
17	9/02/95	9/01/96	None	5
18	9/02/94	9/01/95	None	5
19	9/02/93	9/01/94	None	5
20	9/02/92	9/01/93	None	5
21	9/02/91	9/01/92	None	5

\*Note: A few students at age 7, 16, and 24 took the SC-Alt tests in 2013–2014 school year.

**Exhibit 3.2: Precode Project Coding (Alternate Assessment Eligibility Field)**

<b>Code</b>	<b>SASI Drop-down List Description</b>	<b>Full Description</b>
0	Criteria not met	The student does not meet criteria for alternate assessment.
2	SC-Alt Elem School	The student requires alternate assessment and meets the age eligibility requirement for assessment with the <b>SC-Alt Elem School form</b> this current school year (8–10 years old on September 1, 2013).
3	SC-Alt Middle School	The student requires alternate assessment and meets the age eligibility requirement for assessment with the <b>SC-Alt Middle School form</b> this current school year (11–13 years old on September 1, 2013).
4	SC-Alt High School	The student requires alternate assessment and meets the age eligibility requirement for assessment with the <b>SC-Alt High School form</b> this current school year (15 years old on September 1, 2013).
5	AltAssess NotAgeElig	The student requires alternate assessment <b>but does not meet the age eligibility requirements to be assessed with SC-Alt this current school year</b> (i.e., the student was younger than eight years, age 14, or older than 15 years on September 1, 2013).

**Demographics of Participating Students**

This section describes the demographics of participating students by test form (elementary, middle, or high school). Exhibit 3.4 presents the student demographics for participating students in each grade-band.

For the purpose of this report, the inclusion of students was based on the same criteria applied in the reporting of student scores. A student was included if the following criteria were met: (1) a signed security affidavit was received for the student, (2) the student was not noted to be excluded from reporting for some other reason (e.g., inappropriate administration procedures), and (3) the number of coded responses met the attemptedness requirement for student scoring (i.e., 23 valid responses) in at least one content area. The population of students reported, therefore, includes 1,531 elementary school test forms, 1,478 middle school test forms, and 427 high school test forms.

According to the attemptedness requirements, a student’s responses to a test form could be assigned to one of four completion status categories: completion (“student satisfied attemptedness rule”), invalid due to too few scored responses (“student did not satisfy attemptedness rule”), invalid due to test administration errors (“test administrator did not follow instructions for starting tasks”), or not tested (“student did not answer any content area items”). For all content areas, the majority of students reported completed the administered test form; 97% or more of the eligible students completed ELA and mathematics, 67%–69% completed science and social studies in the elementary and middle

school grade-bands,<sup>1</sup> and 99% completed the high school biology assessment. Of the remaining student records in ELA and math, fewer than 1% of reported test forms were categorized as not tested or not meeting the attemptedness criteria.

Given that the number of students to be assessed on the high school test form was approximately one-third the number of students assessed on either the elementary or the middle school forms, the proportion of demographic characteristics of the student population was relatively consistent across grade-bands. In terms of ethnicity, African American students made up 48%–53% of the assessed students across grade-bands; white students accounted for 38%–41% of the students across grade-bands; and Hispanic students accounted for 5%–7% of students across forms. Other ethnicities each accounted for less than 3% of the assessed population. Gender was also consistent across grade-bands with approximately a two-to-one ratio of male students (66%–67%) to females (33%–34%).

The classification of students in terms of English language proficiency (ELP) was also consistent across grade-bands. The majority of students (94%–96%) were classified as “English Speaker II,” meaning that they had never been coded as an ESL student. The remaining language proficiency classifications each accounted for less than 1% of students by grade-band with the exception of “pre-functional” (3%–5%), indicating that the student scored pre-functional on the ELP assessment and was receiving English as a second language (ESL) services. The percentage of pre-functional ESL students decreased across grade-bands.

The grade reported for a student in the school’s database is the grade reported for funding purposes—the Education Finance Act (EFA) grade—and is often determined by the location of the student’s educational program instead of by the student’s age or years in school. Therefore, approximately 7% of students administered the elementary form (for students ages 8–10, the typical ages of students in grades 3–5) had reported EFA grades lower than grade 3 or higher than grade 5, with most of these students classified in the adjacent grades of 2 and 6. Of students administered the middle school form (for students ages 11–13, the typical ages for grades 6–8), 17% of the students were reported at grades below grade 6 or above grade 8. The vast majority of these students were classified as grade 5 students (15% of all middle school form students), which indicates that these students were being served in educational programs housed in elementary schools. Of the students administered the high school form (for students age 15), 80% were reported as grade 9 or grade 10 (31% and 49%, respectively). Fourteen percent (14%) of the high school form students were reported as grade 8 students, indicating that these students were being served in educational programs housed in middle schools. The purpose of assigning SC-Alt grade-band forms by age is to ensure that students are instructed and assessed on the appropriate grade-band curricula regardless of where their educational programs are housed.

The percentage of students receiving free lunch at schools decreases slightly across forms (69% to 66%), and the percentage of students receiving reduced-price meals increases slightly across forms (7% to 10%). One student was indicated as being a migrant student; two students were indicated as being homeschooled. Ten elementary school students (1%) were indicated as being medically homebound, as were 22 middle school students (1%) and 3 high school students (1%).

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<sup>1</sup> Not all students were required to complete the science and social studies subject areas.

Multiple codes are reported for students in the student database for purposes of funding. Therefore, many SC-Alt students have multiple disability codes, indicating primary and secondary disabilities, and supplemental services. For example, many students with cognitive disability codes also receive speech services and carry a speech/language disability code. For reporting purposes, a coding system is used to designate a student’s primary disability by giving precedence to cognitive disability classifications and other primary disability codes.

Fifteen different disability codes were reported for students assessed with the SC-Alt, as shown in Exhibit 3.3. In the exhibit, the “Precedence” column indicates the precedence of the disability in the coding system: the smaller the indicator, the higher the precedence of the code when two or more codes are reported. For example, if the code for Profoundly Mentally Handicapped (PMD) is indicated in the data, the student’s primary disability will be reported as PMD no matter what other disability types are indicated. Further, higher precedence codes override lower precedence codes. For instance, if both autism and orthopedically handicapped are indicated, a student’s primary disability will be reported as autism.

Students with the primary disabilities of severe mental disability, moderate mental disability, mild mental disability, and autism made up 81% to 89% of the students assessed with the SC-Alt. The rates of severe (or profound) mental disability, moderate (trainable) mental disability, mild (or educable) mental disability, and autism stayed about the same (6%–11%, 19%–37%, 21%–29%, and 20%–30%, respectively). Although a few students were given a primary disability code of speech or language impairment, the vast majority of students received this code because they were receiving speech/language therapy as a supplementary service.

**Exhibit 3.3: Primary Disability Code**

<b>Precedence</b>	<b>Indicated Student Disability</b>	<b>Primary Disability Code</b>
1	Profoundly Mentally Handicapped	PMD
2	Trainable Mental Disability	TM
3	Educable Mentally Disability	EM
4	Autism	AU
5	Developmental Delay	DD
6	Learning Disability	LD
7	Emotional Handicapped	EH
8	Traumatic Brain Injury	TBI
9	Other Health Impaired	OHI
10	Orthopedically Handicapped	OH
11	Visually Handicapped	VH
12	Hearing Handicapped	HH
13	Speech	SP

<b>Precedence</b>	<b>Indicated Student Disability</b>	<b>Primary Disability Code</b>
14	Deaf/Blindness Hearing Handicapped Visually Handicapped	DB
15	Multiple Disable	MD
99	<<None>>	<<Blank>>

**Exhibit 3.4: Summary of Demographic Information**

	Elementary School		Middle School		High School	
	N	%	N	%	N	%
<i>STUDENT'S ETHNICITY</i>						
African American	748	48.86	704	47.5	226	52.68
American Indian/Alaska Native	5	0.33	3	0.2	1	0.23
Asian	21	1.37	21	1.42	5	1.17
Double-Bubbled	.	0	.	0	.	0
Hispanic	102	6.66	96	6.48	21	4.9
Multi-Race	40	2.61	49	3.31	12	2.8
Native Hawaiian/Other Pacific Islander	.	.	3	0.2	.	.
Other	.	0	.	0	.	0
Unknown	.	0	.	0	.	0
White	615	40.17	606	40.89	164	38.23
<i>STUDENT'S GENDER</i>						
Female	507	33.12	494	33.33	146	34.03
Male	1024	66.88	988	66.67	283	65.97
Unknown	.	0	.	0	.	0
<i>ESL (LANGUAGE)</i>						
Advanced	.	.	.	.	1	0.23
Advanced Waiver	.	.	.	.	.	.
Beginner	3	0.2	3	0.2	.	.
Beginner Waiver	.	.	.	.	.	.
English Speaker I	5	0.33	3	0.2	1	0.23
English Speaker II	1440	94.06	1413	95.34	413	96.27
Full English Proficient	.	.	1	0.07	.	.
Intermediate	.	0	1	0.07	.	0
Intermediate Waiver	.	.	.	.	.	.
Pre-Functional	83	5.42	59	3.98	14	3.26
Pre-Functional Waiver	.	.	2	0.13	.	.
Title III First Year Exited	.	.	.	.	.	.
Title III Second+ Year Exited	.	.	.	.	.	.
Unknown	.	.	.	.	.	.
<i>ELIGIBLE FOR FREE OR REDUCED-PRICE LUNCH</i>						
Free Meals	1058	69.11	976	65.86	284	66.2
Full-Pay Meals	368	24.04	386	26.05	104	24.24
Reduced	105	6.86	120	8.1	41	9.56

<i>EFA GRADE (REPORTED GRADE FOR FUNDING)</i>						
1	2	0.13	.	.	.	.
2	93	6.07	.	.	.	.
3	519	33.9	5	0.34	1	0.23
4	530	34.62	14	0.94	2	0.47
5	374	24.43	228	15.38	6	1.4
6	9	0.59	477	32.19	1	0.23
7	2	0.13	486	32.79	7	1.63
8	2	0.13	262	17.68	61	14.22
9	.	.	8	0.54	134	31.24
10	.	.	2	0.13	210	48.95
11	.	.	.	.	6	1.4
12	.	.	.	.	1	0.23
<i>COMPLETION STATUS: ELA</i>						
<b>Attempted</b>	1528	99.8	1468	99.06	421	98.14
<b>Not Tested</b>	1	0.07	2	0.13	3	0.7
<b>Test Not Valid: Student received fewer than 23 scored responses</b>	1	0.07	9	0.61	5	1.17
<b>Test Not Valid: Test administrator did not follow instructions for starting tasks</b>	1	0.07	3	0.2	.	.
<i>COMPLETION STATUS: Math</i>						
<b>Attempted</b>	1520	99.28	1475	99.53	417	97.2
<b>Not Tested</b>	3	0.2	.	.	3	0.7
<b>Test Not Valid: Student received fewer than 23 scored responses</b>	2	0.13	4	0.27	5	1.17
<b>Test Not Valid: Test administrator did not follow instructions for starting tasks</b>	6	0.39	3	0.2	4	0.93
<i>COMPLETION STATUS: Science</i>						
<b>Attempted*</b>	1040	67.93	1010	68.15	423	98.6
<b>Not Tested</b>	485	31.68	461	31.11	2	0.47
<b>Test Not Valid: Student received fewer than 23 scored responses</b>	2	0.13	7	0.47	4	0.93
<b>Test Not Valid: Test administrator did not follow instructions for starting tasks</b>	4	0.26	4	0.27	.	.

<i>COMPLETION STATUS: Social Studies</i>						
<b>Attempted*</b>	1027	67.08	1020	68.83	.	.
<b>Not Tested</b>	499	32.59	455	30.7	429	100
<b>Test Not Valid: Student received fewer than 23 scored responses</b>	2	0.13	4	0.27	.	.
<b>Test Not Valid: Test administrator did not follow instructions for starting tasks</b>	3	0.2	3	0.2	.	.
<i>Special Status</i>						
<b>Migrant Status</b>	1	0.07	.	.	.	.
<b>Home Schooled</b>	.	.	2	0.13	.	.
<b>Medical Homebound</b>	10	0.65	22	1.48	3	0.7
<i>STUDENT PRIMARY DISABILITY</i>						
<b>Unknown</b>	1	0.07	.	.	.	.
<b>Autism</b>	454	29.65	354	23.89	84	19.58
<b>Deaf/Blindness</b>	.	.	.	.	.	.
<b>Developmental Delay</b>	119	7.77	2	0.13	.	.
<b>Emotional Handicapped</b>	2	0.13	7	0.47	1	0.23
<b>Educable Mentally Disability</b>	398	26	436	29.42	92	21.45
<b>Hearing Handicapped</b>	9	0.59	8	0.54	1	0.23
<b>Learning Disability</b>	32	2.09	16	1.08	10	2.33
<b>Multiple Disable</b>	10	0.65	10	0.67	6	1.4
<b>Other Health Impaired</b>	62	4.05	75	5.06	16	3.73
<b>Orthopedically Handicapped</b>	19	1.24	28	1.89	7	1.63
<b>Profoundly Mentally Handicapped</b>	96	6.27	126	8.5	49	11.42
<b>Speech</b>	16	1.05	7	0.47	3	0.7
<b>Traumatic Brain Injury</b>	10	0.65	11	0.74	.	.
<b>Trainable Mental Disability</b>	292	19.07	393	26.52	157	36.6
<b>Visually Handicapped</b>	11	0.72	9	0.61	3	0.7
<b>TOTAL</b>	1531	100	1482	100	429	100

\*Not all students were required to complete the science and social studies subject areas.

### Test Administration Window, Materials, and Timelines

The spring 2014 administration of the SC-Alt included the following important dates:

- SC-Alt test administration training for teachers new to the SC-Alt operational administration (did not administer in 2012 or 2013), five regional SCDE workshops: January 13–17, 2014
- District-level SC-Alt test administration training for all test administrators: February 3–28, 2014
- Test materials arrived in district: February 20, 2014
- Assessment window: March 3–April 25, 2014

- Teachers returned materials to the District Test Coordinator for Alternate Assessment (DTC-Alt): April 28, 2014
- Materials received by contractor: May 2, 2014

Teachers had approximately eight weeks to review the materials and complete the test administration. Teachers received both printed and physical manipulatives to use during test administration. They were also responsible for collecting a few common classroom items that were familiar to the student to use with several tasks.

### **Test Administrator Requirements**

Test administrators were required to receive training on all phases of the administration of the SC-Alt and had to be one of the following:

- A certified employee of the district
- An employee of the district who is a critical needs teacher and has a letter of eligibility, an interim certificate, or a critical needs certificate
- A substitute teacher who is certified and employed by the district on an as-needed basis
- Someone who was a certified teacher but has allowed the teaching certificate to expire owing to retirement, change of career, or some other reason and has been approved by the DTC-Alt as a qualified test administrator
- Someone who is not certified but has been employed by the school district in an instructional capacity and has been approved by the DTC-Alt as a qualified test administrator

If a test was administered in a location other than the school, the test administrator still had to meet the criteria specified above.

### **Test Administrator Training**

Test administration training was required for all test administrators. The SC-Alt is individually administered with a standard script and scored by the test administrator as the assessment is being conducted. Fidelity of administration and scoring is essential to the validity of the assessment results.

Teachers who administered the SC-Alt during spring 2014 but who did not administer the SC-Alt in spring 2012 and 2013 were required to attend a SCDE training session. In addition, all teachers who administered the SC-Alt in spring 2014, including those who attended the SCDE workshops, were required to attend a district-level SC-Alt administration training session conducted by the DTC-Alt. At the completion of the training sessions, each test administrator was required to sign and submit to SCDE an acknowledgment of receiving training and readiness to conduct the assessment.

The training included the following elements:

- Review of the eligibility criteria for students participating in the alternate assessment
- Overview of the Extended Standards, emphasizing the link to the general education standards
- Explanation of how the assessment was developed, including the role of the review committees
- Review of test administrator requirements, test security, and test materials
- Training and practice in pre-assessment using the SPQ
- Description of the assessment format and procedures:
  - Setup
  - Script
  - Scoring
  - Adaptive instructions
- Instruction for making SC-Alt tasks accessible
- Overview of assistive technology and the alternate assessment
- Administration and scoring instruction and practice using released test items provided on video clips of South Carolina teachers administering a task to students representing a variety of disabilities and ethnicities
- Scoring qualifying round
- Review of procedures for receiving and shipping materials back to the DTC-Alt

### **Pre-Assessment Using the Student Placement Questionnaire**

As noted earlier in this Technical Report, the SC-Alt uses the SPQ as a pre-assessment instrument to determine the most appropriate starting point in the assessment. Recall that the SPQ requires the teacher to evaluate the student on 12–15 “can do” statements addressing the student’s skills and knowledge in each content area on the basis of the teacher’s prior instructional knowledge of the student. A total score computed from the teacher’s SPQ responses indicates the initial starting task for the assessment. Once the assessment has begun, the test administrator is required to adjust the starting point for the student if the student is not successful on the first task. Rules have been established for adjusting the starting tasks and for determining when the assessment should be concluded. The starting and stopping rules used with the SPQs for the 2014 administration are presented in Appendix A.

### **Fidelity of Administration and Accuracy of Scoring**

During the assessment administration for science/biology, a monitor had to be present to observe all assessment sessions and verify the use of proper assessment procedures and the authenticity of student responses. Monitors had to be trained, and they had to sign a Test Administrator Security Affidavit to verify that the appropriate procedures were used. The Test Administrator Security Affidavit is located in the answer folder and includes the

principal's verification of the use of appropriate assessment and scoring procedures. Whenever the requested signatures were missing, the administration was considered an invalid administration.

The ELA assessments (7% for elementary and middle schools and 20% for high schools) were audited by having trained raters score the student's performance independently, while witnessing the assessment directly. The results of these studies are reported in detail in Appendix B.

### **Test Security Provisions**

This section describes the test security procedures associated with the SC-Alt. SCDE has the following test security measures in place:

- Each local school board must develop and adopt a district test security policy. The policy must provide for the security of the materials during testing and the storage of all secure tests and test materials before, during, and after testing. Before and after testing, all materials must be stored at a location(s) in the district under lock and key.
- Each district superintendent must designate annually one individual in each district for each mandated assessment who will be the sole individual in the district authorized to procure test instruments that are used in testing programs administered by or through the State Board of Education. The designated individual for alternate assessment is the DTC-Alt. The DTC-Alt is responsible for receiving and distributing all SC-Alt materials and ensuring that all SC-Alt administration procedures and requirements are met.
- All school and district personnel who may have access to SC-Alt test materials or to the location in which the materials are securely stored must sign the Agreement to Maintain Test Security and Confidentiality before they are given access to the materials.
- Test administrators must be trained annually to administer the SC-Alt and must meet all test administrator requirements.
- An assessment monitor must observe all assessment sessions and verify the use of proper assessment procedures and the authenticity of student responses for each completed assessment.
- Test administrators must complete an SC-Alt Test Administrator Security Affidavit for each student they assess.

## Chapter 4: Performance Standards

As a reference, performance-level cut points for the spring 2014 SC-Alt administration are reproduced in Exhibit 4.1.

**Exhibit 4.1: SC-Alt Performance Level Cut Scores on Scale Score Metric**

	Elementary School (ES)	Middle School (MS)	High School (HS)
<i>ELA</i>			
Level 1	—	—	—
Level 2	403	417	429
Level 3	466	477	487
Level 4	491	501	514
<i>Mathematics</i>			
Level 1	—	—	—
Level 2	413	425	434
Level 3	476	489	498
Level 4	526	534	541
<i>Science/Biology</i>			
Level 1	—	—	—
Level 2	430	447	408
Level 3	469	489	484
Level 4	496	514	519
<i>Social Studies</i>			
Level 1	—	—	—
Level 2	423	439	—
Level 3	492	503	—
Level 4	549	560	—

The procedures for setting these performance standards and an analysis of the 2011 operational impact data of the high school biology standards were summarized in Chapter 4 of the SC-Alt spring 2011 operational and field test administration (*American Institutes for Research and South Carolina Department of Education, 2011*) and are not reproduced in this volume. Detailed reports of the SC-Alt standard settings can be found in the *SC-Alt spring 2007 standard setting technical report (American Institutes for Research, 2007)* and *South Carolina Alternate Assessment 2010 standard setting: Setting standards in high school biology technical report (American Institutes for Research and South Carolina Department of Education, 2010b)*. Readers interested in the SC-Alt standard setting procedures are referred to these sources.

## **Chapter 5: Technical Characteristics and Interpretation of Student Scores**

This section describes the psychometric analyses for 2014 operational administrations for ELA, mathematics, science, social studies, and biology. In 2014, operational field-test tasks and embedded field-test tasks in all subjects were newly calibrated and evaluated.

In order to provide a complete description of the technical characteristic of the 2014 assessment in all content areas, this chapter also reports the item analysis results from previous years (see AIR and SCDE's SC-Alt operational and field-test administration reports for 2008, 2009, 2010a, 2011, 2012, and 2013). The reported analyses are intended to ensure the quality of the items, the assessment materials and instruments, and the score reporting scales as measures of state academic standards.

As a reminder to the reader, there are three grade-band forms in each content area: elementary school (grades 3–5), middle school (grades 6–8), and high school (grade 10). ELA and mathematics are assessed on each grade-band, science and social studies only at elementary and middle school grades, and biology is assessed only at high school level. At each grade-band, the assessments have three potential starting tasks that correspond to three levels of task complexity (low, moderate, and high). Students are assigned to a starting task on the basis of teacher judgments recorded in the SPQ for each content area.

### **Analysis and Scaling of Items, Tasks, and Test Forms**

The ELA, mathematics, science/biology, and social studies assessments underwent comprehensive psychometric analyses, including initial item calibrations, after their earlier field testing. Final calibrations were estimated for the ELA, mathematics, and science content areas on the basis of operational data gathered during the spring 2007 operational administration; final calibrations for social studies were computed from operational data from the spring 2008 administration. Calibrations based on operational data were considered superior to those based on field-test data. The vertical scales were also defined using the linking tasks as the vehicle that connected the elementary, middle, and high school forms. High school biology was field tested in 2010 and first administered operationally in spring 2011.

AIR calibrated the items, estimated examinee proficiencies, and calculated scale scores and achievement levels for operational forms. This process entailed examining item statistics to ensure quality measurement across the range of the assessment, calibrating the items within each content area to a common scale, and then applying a maximum-likelihood scoring algorithm to each student's responses to estimate his or her proficiency scores and assign the correct achievement level.

### **Assignment of Examinees to Starting Tasks and Item Calibration and Test Forms Linking**

All eligible students participated in the spring 2014 test administrations. The sample sizes of approximately 1,531 students in elementary, 1,482 in middle school, and 429 in high school, per content area, enabled effective calibration across task starting points and grade-bands.

Students were assigned to one of three starting points on the basis of the sum of the teacher responses on the SPQ. The SPQ cut scores were shown to correlate with student achievement scores on the 2006 field-test administrations. For details, see AIR's SC-Alt spring 2007 operational administration report (American Institutes for Research, 2008). The assignment of student starting tasks based on the SPQ cut scores was intended to expose students to items that were ideally suited to their current level of achievement while ensuring that (a) each student responded to an adequate number of items so that reliable and content-valid proficiency scores could be estimated and (b) an adequate number of students responded to each item for the joint calibration to be reliable.

Teachers were instructed to administer all tasks associated with the assigned starting point, with provisions for dropping to a lower starting point (task) if the student was unable to respond to the items in the task at the assigned starting point. Students who were assigned to high and moderate levels of the assessment but were unable to respond to items in the tasks at those levels may have been moved back to a less difficult starting point.

The linking design allowed a joint (concurrent) calibration of all items within a content area and the placement of the items on a common difficulty scale. The tasks actually used to link the grade-band forms (linking tasks) were selected, in part, on the basis of their moderate difficulty levels. Moderately difficult tasks contribute to more stable linking across levels than tasks that may be either too easy or too difficult for the examinees. Linking across grade-band forms was accomplished by using common tasks across grade-bands. Some of the tasks from the elementary form were on the middle school form; some of the tasks from the middle school form were on the high school form.

Since vertical scales have been well established over the years, no linking tasks exist in 2014 forms.

## **Analysis Plan**

AIR's analyses presented in the remainder of this chapter were conducted in five steps:

1. Data preparation and quality control
2. Classical item analysis
3. Review of items not meeting psychometric criteria for inclusion on operational forms
4. Joint calibration of items according to the Rasch model
5. Final achievement estimation and scale score calculation for operational forms

## **Data Preparation and Quality Control**

Before analyzing the operational test data, AIR psychometricians performed a number of quality control procedures to ensure that scanning operations resulted in accurate data capture of the teacher-recorded student responses. Prior to the test administration, AIR verified all of the point values for each form's answer folder. For each form, two AIR staff members independently verified the possible responses and point values for each item.

After receiving the scanned test data, AIR analysts carefully examined the data file to verify its accuracy. Descriptive statistics were computed to ensure that student case counts on the pre-identification file generally corresponded to the actual counts based on test data at the state, school, and classroom levels. In addition, AIR verified that the total number of items in the data file matched the number of items on the answer folder and in the test booklet and then examined the frequency distributions of item responses to identify potential scoring problems, such as out-of-range values or unused response categories.

For purposes of item analysis and student scoring, respectively, non-response (NR) data were treated in two different ways:

For *item analysis and calibration purposes*, a student had to have at least three scored responses for the testing attempt to be considered valid. For a response to be considered a scored response, the test administrator had to have assigned a numeric score (0–4) to the student’s response. If the administrator scored NR for all items in a task, the task was treated as not administered, and NR values were recoded as missing.

For *operational scoring* of student responses and estimation of student proficiency, however, the NR codes were treated as indications that the item was administered and that the student did not possess the content area knowledge and skill to respond. In this case, all NR values were recoded as zeroes and included in the student proficiency estimates. Following this recoding, tests were reexamined to determine the number of scored responses (0–4) in each content area. For operational scoring, a student had to have at least 23 scored responses of any kind for the assessment to be considered a valid attempt within a content area.

After the accuracy of the data file was verified, classical item analyses and IRT analyses were performed. Several quality control procedures were taken to ensure the accuracy of these analyses.

As an initial step, the program control file was checked by two data analysts to ensure that form layout was correctly specified and that item response values were correct. As a second step, two analysts independently performed all analyses. Results of the parallel analyses were compared for mistakes by using commercially available file comparison software. Last, the analysis results were spot-checked by using other commercially available statistical software to ensure that the results were consistent across statistical software packages. *These comprehensive quality control steps are highly effective in detecting any issues that might influence the interpretation of the item analysis results.*

## **Classical Item Analysis**

Classical item analysis for the SC-Alt operational and field-test forms was conducted using the *AM* statistical software (<http://am.air.org>). The item analysis yielded the proportion of students in each response category, the percentage of omitted responses for that item,<sup>2</sup> and the proportion of students who were unable to respond to the item because of access limitations (where relevant). Correlations between the item score and the test score were computed using adjusted polyserial correlations. For purposes of calculating item statistics,

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<sup>2</sup> An item was considered omitted if no response was recorded for the item (or the test administrator marked NR on the student score sheet), but the student responded to subsequent items on the task.

omitted items were treated as incorrect when there was at least one scored response within the same task (see above). Minimum- and maximum-point values, average item scores, and adjusted item-total polyserial correlations were calculated for all items.

Test form statistics, such as internal consistency reliability estimates and standard error of measurement statistics, were suppressed at this point because all students were not expected to take all items. Such statistics would be misleading before Rasch scoring was applied. Special marginal reliability analyses used to determine the reliability of the student score estimates are described in a later section of this chapter.

The proportion of students in each score-point category was calculated as defined by the item's scoring guidelines, as well as the proportion of students with blank responses within attempted tasks (i.e., those with at least one scored response). Item difficulty was computed as the mean score on the item across all students taking the form and with a scored response on that item. The average proportion of total points, calculated as the mean score divided by the total number of points possible on the item, serves as an additional measure of item difficulty.

### **Review of Items Not Meeting the Specified Psychometric Criteria**

Classical item analysis provided information about the technical quality of the items; items failing to meet specified psychometric criteria were flagged for subsequent review. During field testing of ELA and mathematics (spring 2006), science (fall 2006), and social studies (spring 2007), AIR reviewed all flagged items in concert with SCDE to determine whether they were of sufficient psychometric quality. For the 2007 operational forms in ELA, mathematics, and science and for the 2008 operational form in social studies, AIR conducted a statistical review of the items to determine whether any operational items were performing in an unacceptable fashion. For the spring 2009 operational SC-Alt administration, AIR subjected all embedded field-test items in ELA, mathematics, science, and social studies to an item data review. The spring 2010 operational SC-Alt administration contained only operational items in ELA, mathematics, science, and social studies. Items from the 2010 spring independent field test in high school biology were subjected to similar analyses as with previous field tests. The 2011 and 2012 administration utilized embedded field-test design in ELA, mathematics, science, and social studies, plus operational field-test tasks in science. The 2013 administration used embedded field-test tasks in all subjects, plus operational field-test tasks in ELA, math, and social studies. The 2014 administration contained only operational tasks in ELA and Mathematics, and operational field-test tasks and field-test tasks in science and social studies.

### **Item Response Theory Calibration and Linking Test Forms**

This section describes AIR's procedures for item calibration using IRT techniques. Item parameters were estimated using the Partial Credit Model (Masters, 1982) approach available using Winsteps software. A common item design anchored on operational items was used to enable simultaneous calibration and linking across grade-band test forms in each content area. Items were jointly calibrated across grade-bands in a single Winsteps run for each content area. This calibration approach put the item parameters of all grade-band test forms within a content area on the same scale.

For 2014, the results reported on the vertical scale appear in Exhibit 5.1 and Exhibit 5.2. It is interesting to note that the mean scores show a general upward trend from elementary to middle school levels. This indicates that a vertical scale is a useful way to describe the results of this population of students. The growth is not observed from middle school to high school. In addition, in almost every grade-band, a few students were at the floor of the test (minimum scale score equal to 260), but fewer reached the ceiling (maximum scale score equal to 740).

**Exhibit 5.1: Scale Score Statistics, by Grade-Band, Overall**

Subject	Statistic	Elementary School	Middle School	High School
ELA	N	1528	1468	421
	Mean	495.77	515.11	515.52
	SD	48.09	54.55	64.91
	Min	260	260	260
	Max	631	740	740
Mathematics	N	1520	1475	417
	Mean	504.04	508.74	505.21
	SD	51.73	45.77	52.43
	Min	260	260	260
	Max	740	737	676
Science/Biology	N	1040	1010	423
	Mean	499.60	512.96	498.15
	SD	56.16	59.32	98.38
	Min	260	260	260
	Max	681	740	740
Social Studies	N	1027	1020	
	Mean	503.53	517.60	
	SD	59.79	61.66	
	Min	260	260	
	Max	740	740	

Exhibit 5.2: Scale Score Statistics, by Grade-Band, by Primary Disability

Subject	Statistic	Elementary School				Middle School				High School			
		Severe	Moderate	Mild	Autism	Severe	Moderate	Mild	Autism	Severe	Moderate	Mild	Autism
ELA	N	96	292	397	452	121	391	436	348	45	157	91	83
	Mean	416.88	484.62	523.27	492.96	437.2	502.57	547.09	510.9	435.64	512.54	562.66	506.86
	SD	62.77	31.98	33.6	36.37	70.57	37.08	41.24	41.75	76.99	38.95	47.51	54.67
	Min	260	289	322	354	260	264	357	327	260	365	456	260
	Max	542	589	613	631	621	740	740	654	568	653	686	634
Mathematics	N	95	288	398	449	121	393	435	354	46	153	90	84
	Mean	415.44	491.49	530.78	505.2	440.26	500.24	530.24	511.14	434.17	507.1	534.52	508.33
	SD	65.34	34.84	38.94	41.76	60.84	34.07	30.1	40.46	73.44	27.99	37.62	47.12
	Min	260	260	260	260	260	260	440	260	260	386	437	306
	Max	555	588	740	740	557	737	681	681	523	577	676	613
Science/Biology	N	67	205	260	312	74	268	305	248	47	154	92	84
	Mean	401.12	492.32	530.37	495.13	423.95	498.23	546.45	508.71	386.51	491.99	570.03	484.38
	SD	73.75	40.16	40.73	44	70.53	49.18	38.86	48.42	78.75	71.34	78.59	90.55
	Min	260	260	260	266	260	260	416	373	260	260	362	260
	Max	597	609	681	645	554	740	740	740	529	695	740	724
Social Studies	N	58	192	283	309	81	271	302	237				
	Mean	407.71	490.82	536.15	497.12	423.48	504.64	552.14	513.5				
	SD	70.4	44.11	43.86	47.25	73.63	44.41	48.23	54.19				
	Min	260	261	260	348	260	264	309	264				
	Max	567	597	665	740	549	740	740	740				

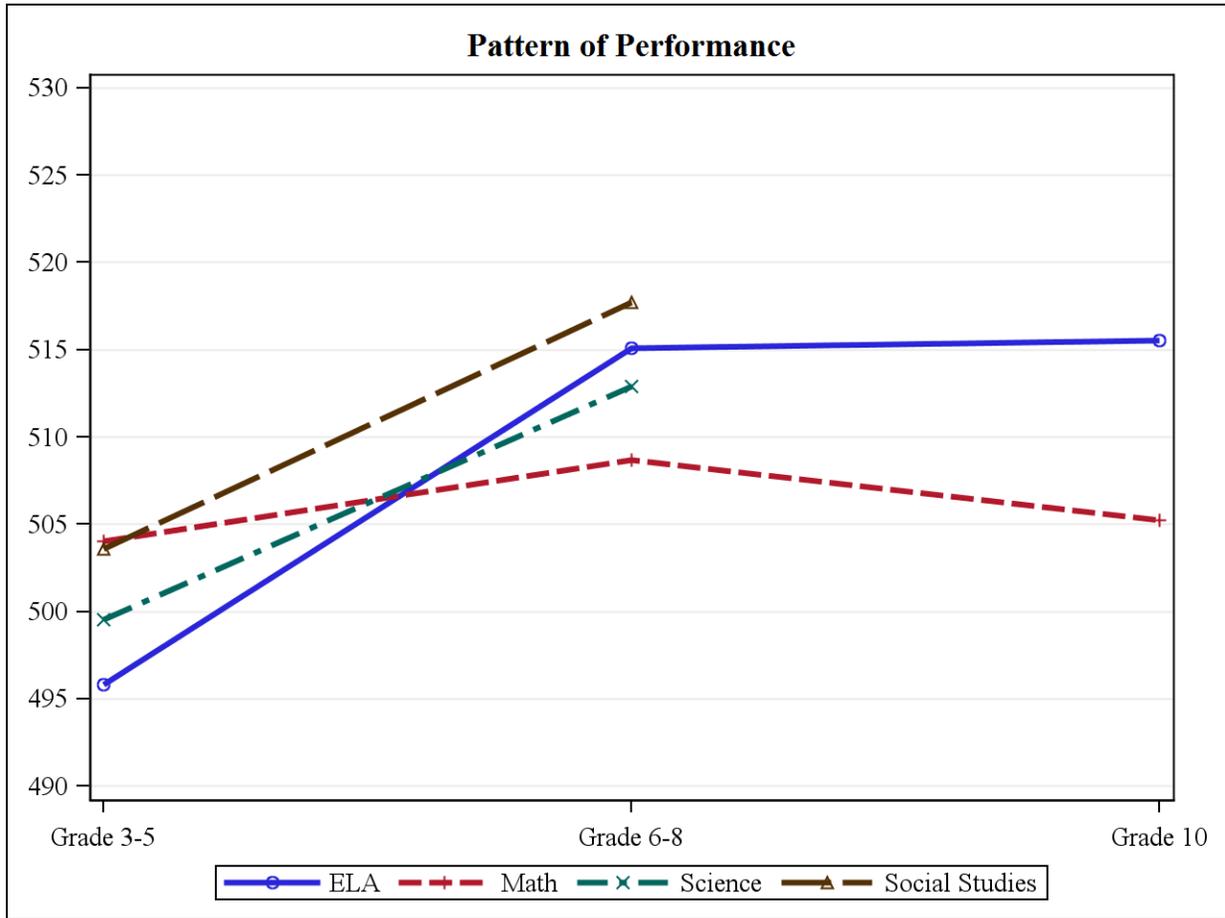
The SC-Alt implements vertical scaling of the assessments, permitting the measurement of student progress on the state content standards over time. Such a scale can provide educators and parents with useful information for monitoring student performance as students move through grades over time.

The development of this scale required the use of a common item linking design. In a common item design, *linking item tasks* appear on two adjacent grade-band forms of the assessment. These linking items allow for the grade-band scales to be connected, thus establishing the vertical scale.

There are at least two features of this linking design and the use of grade-level forms that warrant clarification. First, the linking items are the same (i.e., they are the same items) between two grade-band forms. They are connected to grade-specific standards in the higher grade as well as in the lower grade. As a result, students are not exposed to off-grade-level content since the common items serve a dual purpose in measuring content in both grade-bands. Second, even though some items on each grade-band form are administered for two or three years before replacement, it is not likely that exposure of the items to the students would trigger responses based on the recollection of any item's administration the previous year. As students grow academically, their starting task will likely change each year. New starting tasks mean that a portion of the items any student receives will be unique each year. New task development allowed for field-test tasks to be placed on the 2014 form for science and social studies. These field-test tasks will then be placed on the 2015 form as operational tasks, provided that enough of their items passed the 2014 item data review.

The linking design was changed for the 2011 forms and further changes in the use of linking tasks were made in the 2012 and future forms. For the 2011 forms, in the area of science, biology was added as an operational assessment at the high school level without linking to the earlier grades. Vertical linking tasks were also discontinued for the elementary and middle school science forms. A linking task design was maintained in ELA, mathematics, and social studies. For the 2012 and 2013 forms, vertical linking tasks are used only for ELA and mathematics, and the scores of these linking tasks will contribute operationally to student performance scores only at the lower grade-band. In 2014 forms, no linking tasks exist.

A graph of the overall pattern of performance for 2014 on the vertical scale is shown in Exhibit 5.3. Again, there is a general upward trend from elementary to middle school grade-bands in each of the four subject areas. This graph shows that the vertical scale in the SC-Alt was successful at capturing growth across grade-bands.

**Exhibit 5.3: Overall Pattern of Performance on the Vertical Scale**

### Using Item Responses to Estimate Student Proficiency

This section describes the estimation of student proficiency for the SC-Alt operational administration of ELA, mathematics, and science/biology assessments for elementary, middle, and high school; social studies assessments for elementary and middle school are also reported. The section describes the estimation procedures used to determine student proficiency based on the items administered, the transformation of proficiency estimates on the Rasch theta scale into scale scores, and the relation of achievement estimation to reliability estimation.

Student proficiency scores were estimated using a maximum-likelihood approach based on the scored items for each student. This method calculates the theta score that maximizes the likelihood function of the given item responses for each student. Comparable scale-score estimates from these different item responses were achieved through the measurement-invariance property of IRT ability estimates, even when students were exposed to different ranges of items.

Under the Rasch-based IRT model, there is a one-to-one correspondence between the estimated theta score and the total raw score for a specific set of items. However, in the SC-Alt, each student can take different sets of items. Using the pattern scoring method for

calculating theta scores, AIR ensured that (a) two students who took the same items and achieved the same item scores were assigned the same theta score, and (b) students who took more difficult items were assigned higher theta scores than students with the same raw scores who took less difficult items. Thus, the scoring method took into account both the number of raw score points the student achieved and the difficulties of the items the student responded to. This scoring process was performed separately for each content area.

Once theta values had been estimated for each student, AIR converted the theta estimates to scale scores using a scale metric determined by SCDE in consultation with AIR. The SC-Alt in ELA, mathematics, science, and social studies were scaled to have a mean of 500 and a standard deviation of 80 on the vertical scale for the grade-band 6–8 assessment. The grade-band 3–5 and grade 10 assessment means and standard deviations were calculated in relation to the grade-band 6–8 mean and standard deviation. This was done by performing a linear transformation of the Rasch theta scale for each content area, fixing the mean of the middle school test form scale at 500, and multiplying the student’s theta deviation score by 80 as shown in the formula below:

$$y_{ijk}^* = 500 + \left( \frac{\hat{\theta}_{ijk} - \hat{\mu}_k}{\hat{\sigma}_k} \right) * 80,$$

where

$i$  indexes student;

$j$  indexes grade-band;

$k$  indexes content area;

$y_{ijk}^*$  is the scale score for student  $i$  in grade-band  $j$  and content area  $k$ , given estimated ability,  $\hat{\theta}_{ijk}$ ;

$\hat{\mu}_k$  is the content-area-specific mean for the middle school test form; and

$\hat{\sigma}_k$  is the content-area-specific standard deviation for the middle school test form.

A similar linear transformation of Rasch theta scale was done for SC-Alt biology assessment, fixing the mean of form scale at 503.488764 and the standard deviation at 84.5495264. The  $\hat{\mu}_k$  is the mean theta estimates and  $\hat{\sigma}_k$  is the standard deviation of theta estimates for the high school biology test form.

SCDE also decided to truncate the scale score ranges so that the lowest possible scale score was 260 and the highest possible scale score was 740. Student scale-score estimates were truncated to the smallest whole integer (e.g., an estimated scale score of 440.60 would become 440). Additionally, scale scores were calculated and checked using a method similar to the process for total raw data.

Once scoring was completed, it was possible to estimate the internal consistency score reliability of the grade-band assessments by estimating the marginal measurement error across students. These estimates produced different standard errors for each student, depending on the items they were given and their level of performance on those items. This value was used to determine the score reliability as the proportion of true score variance to observed score variance. We estimated this value within each content area (a) across the entire theta scale, (b) across grade-band forms, and (c) for each starting point within a grade-band.

## Test Score Reliability

This section provides the marginal reliability for each grade-band, content area, and group of students beginning at each starting task determined by the SPQ for the spring 2014 administration.

Classical test theory-based reliability indices, such as Cronbach's alpha, were not appropriate for the SC-Alt because the length of the test and the subset of items differed for each student. The reliability coefficient for the SC-Alt was, therefore, calculated as the *marginal reliability* (Sireci, Thissen, & Wainer, 1991), which is equivalent in interpretation to classical internal consistency estimates of reliability.

First we determined the marginal measurement error variance,  $\bar{\sigma}_e^2$ , across all examinees with a score strictly between the score limits of 260 and 740:

$$\bar{\sigma}_e^2 = \int \sigma_e^2 p(\theta) d\theta = \frac{\sum \sigma_e^2}{N},$$

where  $\bar{\sigma}_e^2$  is the square of the standard error of student ability estimate,  $\hat{\theta}$ . Thus, the marginal measurement error variance could be estimated as the average of squared standard error of  $\hat{\theta}$ .

Then we estimated the marginal reliability as

$$\bar{\rho} = \frac{\hat{\sigma}_\theta^2 - \bar{\sigma}_e^2}{\hat{\sigma}_\theta^2},$$

where  $\hat{\sigma}_\theta^2$  is the variance of observed  $\theta$  estimates.

The marginal reliability estimate,  $\bar{\rho}$ , can be interpreted similarly to classical reliability indices such as Cronbach's alpha. Extreme scores, 260 and 740, are excluded in the computation. Estimates of the marginal reliability for the test forms corresponding to the three SC-Alt grade-band assessments can be seen in Exhibit 5.4.

**Exhibit 5.4: Marginal Reliability and Standard Error of Measurement by Grade-Band and Subject**

Subject	Grade-Band	Elementary School	Middle School	High School
English Language Arts	N	1514	1455	413
	Reliability	0.928	0.928	0.936
	$\bar{\sigma}_{e^*}$	11.4	13.3	13.9
Mathematics	N	1502	1464	412
	Reliability	0.937	0.903	0.930
	$\bar{\sigma}_{e^*}$	11.2	12.6	11.9
Science/Biology	N	1032	996	405
	Reliability	0.910	0.913	0.910
	$\bar{\sigma}_{e^*}$	15.6	15.5	26.0
Social Studies	N	1017	1010	
	Reliability	0.933	0.930	
	$\bar{\sigma}_{e^*}$	14.2	15.1	

The marginal reliability estimates for ELA, mathematics, science/biology and social studies met or exceeded 0.90 in each grade-band form. The reliability estimates of all four content areas fall into the range of reliability coefficients found with large-scale assessments (Rudner & Schafer, 2001) and meet the reliability requirements for assessments used for the purposes for which the SC-Alt was designed.

In addition to the marginal reliability estimates, Exhibit 5.4 also displays the marginal standard errors of measurement for each subject and grade-band, labeled  $\bar{\sigma}_{e^*}$ . These marginal standard errors of measurement range between 11 and 26 scale score units, placing the standard error of measurement (SEM) at approximately from a quarter to less than a third of a standard deviation of the content area and grade-band.

Appendix E shows the marginal reliability estimates broken down by groups of students beginning at each starting task. The reliability coefficients in Exhibits E-1–E-4 are generally somewhat attenuated compared to those in Exhibit 5.4, due to the reduction in variance of scale scores grouped by starting task.

Appendix E also displays the marginal reliability coefficients for each subject and grade-band, broken down by gender (see Exhibit E-5) and by the major ethnicity subgroups (e.g., African American vs. white; see Exhibit E-6). The coefficients in Exhibits E-5 and E-6 range in the low- to mid-90s, indicating acceptable reliabilities for these demographic subpopulations.

## Classification Accuracy

This section describes the extent to which student achievement-level classifications were accurate across students. Classification accuracy was estimated for each cut score as the average probability of correct achievement-level assignments across all examinees (assignments above or below the cut score), given each examinee's estimated proficiency score,  $\theta_i$ :

$$CA_K = \frac{\sum_{i=1}^{N_{k \geq K}} P(\theta_i > \theta_K^* | \theta_i, k_i \geq K) + \sum_{i=1}^{N_{k < K}} [1 - P(\theta_i > \theta_K^* | \theta_i, k_i < K)]}{N},$$

where

$\theta_i$  is the proficiency (i.e., theta) of student  $i$ ;

$k_i$  is the assigned performance level of student  $i$ ;

$\theta_K^*$  is the cut score for the performance level  $K$  on the theta scale; and

$N$  is the sum of the number of students at or above the cut score,  $N_{k \geq K}$ , and the number of students below the cut score,  $N_{k < K}$ , or simply the total number of students.

Thus,  $P(\theta_i > \theta_K^* | \theta_i, k_i \geq K)$  is the probability that a student with  $\theta_i$  assigned to achievement level  $k_i$  is above the cut score,  $\theta_K^*$ . It is computed as

$$P = \frac{\int_{\theta \geq \theta_{\text{cut}}} f(\theta)L(\theta | \mathbf{z}, \mathbf{b})d\theta}{\int f(\theta)L(\theta | \mathbf{z}, \mathbf{b})d\theta}$$

In the formula,  $L(\theta | \mathbf{z}, \mathbf{b})$  is the likelihood of theta given the response  $\mathbf{z}$  and item parameters  $\mathbf{b}$  and  $f(\theta)$  is the prior of theta distribution that can take different distribution such as normal, or uniform, depending on our prior belief. Using Bayes' rule, we have

$$f(\theta | \mathbf{z}, \mathbf{b}) \propto f(\theta)L(\theta | \mathbf{z}, \mathbf{b}),$$

For the Rasch model,  $L(\theta | \mathbf{z}, \mathbf{b})$  is computed as

$$L(\theta | \mathbf{z}, \mathbf{b}) = \prod_{i \in MC} \left( \frac{\text{Exp}(z_i \theta - b_i z_i)}{1 + \text{Exp}(\theta - b_i)} \right) \prod_{i \in CR} \left( \frac{\text{Exp}(z_i \theta - \sum_{k=1}^{z_i} b_k)}{1 + \sum_{i=1}^{K_i} \text{Exp}(\sum_{k=1}^i (\theta - b_k))} \right)$$

$$\propto \text{Exp}(r \theta) \prod_{i \in MC} \left( \frac{1}{1 + \text{Exp}(\theta - b_i)} \right) \prod_{i \in CR} \left( \frac{1}{1 + \sum_{i=1}^{K_i} \text{Exp}(\sum_{k=1}^i (\theta - b_k))} \right)$$

where  $K_i$  is the maximum score for item  $i$  when this item is a polytomous item. It can be noted that the calculation above depends on total raw score  $r$  only when using the attempted items.

The classification accuracy is the expected rate of correct classification probability, ranging from 0 to 1, where higher values indicate superior classification consistency. Exhibit 5.5 shows the classification accuracy by content areas, achievement levels, and grade-bands.

**Exhibit 5.5: Classification Accuracy**

Subject	Achievement Level	Elementary School	Middle School	High School	Overall
English Language Arts	Level 2	0.993	0.993	0.986	0.992
	Level 3	0.951	0.961	0.931	0.953
	Level 4	0.921	0.905	0.937	0.916
Mathematics	Level 2	0.991	0.990	0.987	0.990
	Level 3	0.963	0.927	0.916	0.942
	Level 4	0.931	0.916	0.937	0.926
Science	Level 2	0.984	0.976		0.980
	Level 3	0.936	0.921		0.929
	Level 4	0.899	0.923		0.911
Biology	Level 2			0.961	0.961
	Level 3			0.915	0.915
	Level 4			0.926	0.926
Social Studies	Level 2	0.985	0.984		0.984
	Level 3	0.928	0.904		0.916
	Level 4	0.939	0.946		0.943

For example, according to the estimates in Exhibit 5.5, for the grade-band 3–5 ELA assessment, 99% of students were correctly classified at Level 2 or higher (versus at Level 1) and 95% of students at Level 3 or above (vs. at Levels 1 or 2 combined). Students in all grade-bands and subjects had a probability greater than 0.90 of being classified accurately as proficient (i.e., as Level 3 or higher) vs. not proficient.

These results indicate that the measurement errors at the performance-level cut points for ELA, mathematics, science/biology, and social studies (Exhibits 5.1 and 5.4) are small compared to the overall variance of student performance.

The calculation of the probability of the correct performance level for students is described in the following section.

## Chapter 6: Score Reports

This chapter describes the method used for reporting scores on the SC-Alt for the spring 2014 administration. An Individual Score Report (ISR) is included in Appendix F as an example of the highly detailed and diagnostic nature of the reports. This chapter gives a brief overview of how scores on the SC-Alt are reported; a more detailed description is available in a separate *Score Reports User's Guide*.

The SC-Alt has three types of score reports: the ISR, or family report; school reports; and district reports. Each report conveys specific information to its target audience. The reports are designed to be easily used by parents and educators. Of particular note, the reports include in-depth information about what students know and can do relative to the South Carolina academic content standards and to the performance levels.

The ISR provides specific performance feedback for each student across these content areas: ELA, mathematics, science, and social studies in grade-bands 3–5 and 6–8; and ELA, mathematics, and biology in grade 10. Within each content area, a graphic bar highlights the student's performance level along the proficiency scale. Each performance level is described in broad, easy-to-understand content terms. Further descriptions of what a student knows and can do are tailored and printed for each obtained performance level. For example, if a student is classified as Level 3 in mathematics, the following message is printed: "Students who score at Level 3 should be able to add and subtract simple numbers, count and compare objects in a group, compare objects by color, size, or shape, identify three-dimensional shapes, and read information in a graph." **Note:** Scale scores were added to the ISR starting with the spring 2008 reporting cycle.

Specific activities, based on each student's performance level for each content area, are presented for the family to do at home to help ensure positive academic growth in the content area.

The school report provides a summary of the performance of each student in the school. The alphabetical list of students contains basic demographic information and test form administered, in addition to achievement data. A scale score and achievement level are listed for each student for each content area. A school summary shows the number of students scoring at each performance level.

Three district-level reports are issued. The district roster summary report displays the roster of the district's tested students along with their demographic information, their scale scores and performance levels for each content area, and type of test form. The district summary by test form report presents a roster of schools in which students were tested, identifying the test form and giving the number of students tested in each content area and the percentages achieved in each performance level by content area. The total number of students tested with each form and their performance-level distributions by content area are listed at the bottom of the report. The district demographic summary report shows the number of students tested and the distributions of performance levels in all content areas, disaggregated by gender, ethnicity, lunch program, migrant status, and ESL status.

The separate *Score Reports User's Guide* has more specific information on how to interpret student scores and score reports and how to relate academic growth as measured by the SC-Alt to classroom curricula and activities. The guide has been widely distributed throughout South Carolina.

## **Chapter 7: Student Performance Data from the Spring 2014 Administration**

Performance data from the spring 2014 administration are presented in this chapter. This was the eighth operational administration of the SC-Alt ELA, mathematics, and science assessments; the seventh operational administration of the SC-Alt social studies assessment; and the fourth operational administration of the SC-Alt high school biology assessment.

A total of 3,442 students from 78 school districts and 575 schools were tested with the SC-Alt in spring 2014. The total number of tested students with one or more valid content area scores was 1,531 for the elementary form, 1,478 for the middle school form, and 427 for the high school form.

About one-third of the participating school districts (25; 32%) tested 15 or fewer students; 34 districts (44%) tested 16 to 50 students; and 19 districts (24%) tested more than 50 students each. Ten districts tested more than 100 students; the greatest number of students tested in one district was 297.

Of the 575 schools testing SC-Alt students, 347 (60%) tested five or fewer students; 147 (26%) tested six to 10 students; 69 (12%) tested 11 to 20 students; and 12 schools (2%) tested 21 or more. Only two schools tested more than 50 students each (67 and 74 students).

The elementary school form was developed to be administered to students who are 8, 9, or 10 years old at the beginning of the school year, which are the ages typical of students enrolled in grades 3, 4, and 5. The middle school form was developed for students who are 11, 12, and 13 (typical of students enrolled in grades 6, 7, and 8), and the high school form was developed for students age 15 (typical age of students in grade 10).

Students tested with reported ages outside the specified age ranges were either erroneously assigned to the forms by the test administrator or, in some cases, took the test as a result of birth date coding errors on the data files. Students older than 15 (e.g., 16) may be assessed with the high school form if they have not been assessed at the high school level previously.

The performance of students by grade-band form, age, and demographic group for the ELA, mathematics, science, and social studies content areas is presented in Appendix G. As required, the scale score descriptive statistics are suppressed for groups that have fewer than 10 students.

## Chapter 8: Validity

### Content Validity

One source of evidence for the content validity of the SC-Alt was obtained through independent alignment studies. The University of North Carolina at Charlotte (UNCC) conducted studies of the alignment of (a) ASMGs to grade-level curriculum standards and (b) SC-Alt items to the ASMGs that they targeted. This was a pilot study conducted by Flowers, Browder, Wakeman, and Karvonen with UNCC through the National Alternate Assessment Center (NAAC). (South Carolina is a member state of the NAAC.) A second independent study of ELA and mathematics was completed by the South Carolina Education Oversight Committee (EOC; 2008a) as required by the state Education Accountability Act of 1998 (EAA). The EOC approved the ELA and mathematics content areas on February 28, 2008. The UNCC-alignment study results for the ELA and mathematics assessments are reported in detail in Flowers, Browder, Wakeman, and Karvonen (2006a). The results of the alignment studies for the ELA and mathematics assessments indicate that

the state has evidence supporting alignment for its measurement guidelines and alternate assessment based on all seven criteria. We conclude that overall this is an alternate assessment system that links to the grade level content. Some areas for consideration in further development of the system are noted related to balance of content. (p. 7)

The alignment study results for the science assessment are reported in detail in Flowers, Browder, Wakeman, and Karvonen (2006b) and in an addendum dated December 21, 2007. The results of the alignment study for the science assessment indicate that

the strength of the South Carolina science Alternate Assessment was that nearly all of the content was academic science content (98%). This is especially notable given that the alternate assessment tasks included items accessible to students at all symbolic levels. In contrast, the degree of alignment of AA tasks/items to grade-level standards was lower than those found in the alignment of ELA and mathematics. This difference could be due to the fact that the state's science grade-level standards changed during the development of the science AA. Another challenge was that the state had linked its alternate assessment tasks to the state standards and not directly to the measurement guidelines, creating a tough challenge to demonstrating alignment....Our work with other states suggests that science may typically be the area rated as having the weakest alignment. (p. 4)

SCDE reviewed the initial science alignment study and determined that one source of some misalignment had resulted from the linking of some items to multiple standards and indicators in the alignment document provided by SCDE. During the Science Content Review Committee meeting, some members recommended adding additional indicators to align to some items. The intent of these recommendations focused more on instruction and demonstrating that instruction could include multiple standards and indicators. However, the alignment study team considered only the first two standards aligned to each item. In some cases, the first two standards were not necessarily the most appropriate. SCDE prioritized the standards and indicators and resubmitted the documentation for an additional study. From this review, completed December 21, 2007 (Flowers, Browder, Wakeman, & Karvonen,

2007), 163 of 173 items were rated as academic. Of the 10 items listed as nonacademic, 6 were rated as foundational (p. 1). SCDE is currently addressing the items that were rated as having no content centrality by developing replacement items for new forms.

At the time of the alignment study for ELA and mathematics by Dr. Flowers and colleagues, the design of the SC-Alt was envisioned as a single assessment across grade levels. This design changed to a grade-band assessment following the study; however, the information provided from the alignment study was used to identify items with alignment difficulty, and these items were omitted from the operational grade-band test forms. Information from the review along with teacher comments was also used during item data review as part of the decision-making process regarding inclusion of items in the assessment.

A second independent review of the alignment of the science assessment was conducted by the Education Oversight Committee (EOC; 2008b). The EOC approved the elementary and middle school science alternate assessment on August 12, 2008. The EOC alignment findings were based on the review of two sets of studies of the SC-Alt:

- Studies of the alignment between the SC-Alt science assessment and the state academic standards conducted by University of North Carolina-Charlotte and Western Carolina University professors of curriculum and special education, in cooperation with the South Carolina State Department of Education (SCDE) and the National Alternate Assessment Center (Flowers, Browder, Wakeman, & Karvonen, 2006a, 2006b, 2007)
- A technical review of the task and item data from the 2007 test administration conducted by a professor of educational research and assessment at the University of South Carolina

Copies of the reports of the EOC reviews and findings are available in their entirety from the SCDE. Based on this review, the EOC identified a number of strengths of the SC-Alt science assessment that were noted in the final report:

- The assessment provides accountability and information for instructional improvement for students with significant cognitive disabilities who would not otherwise be assessed in the state testing programs, even with test accommodations and modifications.
- The assessment is intended to be aligned with the same grade-level academic standards as for all students, although at levels of complexity appropriate for the diversity of cognitive functioning observed among students with significant cognitive disabilities.
- The assessment format allows each student to respond to the items using the communication modes the student uses during instruction, such as oral response, pointing, eye gaze, a response card, sign language, or an augmentative communication device.
- The procedures for placing the student at the appropriate level for beginning each assessment reduces student fatigue and maximizes the student's opportunities to show his or her highest performance;

- The items in the assessment have a wide range of difficulty, and the test is moderately able to discriminate between high and low levels of performance.

The EOC report noted that while 96% of the items were found to be aligned to science inquiry standard indicators, the alignment of the items to content standards was 78%, falling short of an expectation for successful alignment of 90% set by the original evaluators. The EOC recommended that the SCDE review the alignment of the SC-Alt science items to the grade-level standards and identify items needing revision or replacement.

The SCDE and its contractor, AIR, reviewed the alignment and the ASMGs and established priorities for development of tasks to fill identified gaps. During 2008, SCDE and AIR developed five new tasks consisting of 32 items to be used to replace poorly aligned items and improve content coverage in science. Three tasks were developed for the elementary science form, and two tasks were developed for the middle school form based on the findings of the alignment study. The high school physical science test was replaced by a high school biology assessment in spring 2010.

An independent review of the alignment of the new items by the Center for Research on Education (2009a) found that 98% of the new items were aligned to grade-level content standard indicators. Copies of the report of the alignment reviews and findings are available in their entirety from the SCDE.

A follow-up alignment study of the high school ELA and mathematics assessments and biology field-test items was conducted by the Center for Research on Education in October 2009, using the same procedures that were used for the elementary and middle school alignment studies in December 2006 and January 2007. Almost all (94% to 96%) of the items were rated as academic. This percentage exceeds the value typically found in alternate assessments (90%) according to the reviewers. The alignment study results are reported in detail in *High School Alternate Assessment Alignment Report to the South Carolina State Department of Education* (Center for Research on Education, 2009b).

### **Convergent and Discriminant Validity**

According to Critical Element 4.1(e) of the federal peer review and Standard 1.14 of the *Standards for Educational and Psychological Testing* (AERA, APA, & NCME, 1999), it is desirable, if not necessary, to provide evidence of convergent and discriminant validity. One common method for examining this aspect of validity is with a multitrait-multimethod matrix (MTMM) (Campbell & Fiske, 1959).

Campbell and Fiske (1959) proposed the MTMM design as a tool for the study of convergent and discriminant validity in psychological measurement. The MTMM employs a crossed factorial measurement design of traits and methods to reveal these types of validity in comparison:

- Large correlations on validity diagonals (i.e., same trait and different methods) indicate convergent validity.
- Low correlations in the heterotrait-monomethod blocks indicate discriminant validity and the absence of method effects.

- Low correlations in the heterotrait-heteromethod blocks also indicate discriminant validity.

## Selection of Traits and Methods

The student's abilities in each of the subjects—ELA, mathematics, science/biology and social studies—make up the four traits for the MTMM study. Two methods are considered for assessing these traits: the SPQ, as a structured teacher rating of student's attainment, and the SC-Alt scale score, as an IRT-based indicator of the student's performance in each subject or trait. In other words, the two methods contrast test scores of student performance with expert (or teacher) ratings. With four traits and two methods, the MTMM correlation matrix is of order 8. Note that the high school assessment does not include a social studies component; therefore, the MTMM for high school has only six rows and columns.

## Results

MTMMs were computed separately for each grade-band. The results are given in Exhibits 8.1–8.3. Pearson correlations are used, with pairwise deletion of missing data. For each matrix, the minimum pairwise sample size is indicated. *P*-values of individual correlation coefficients are not reported since *all* correlations are significant ( $p < 0.05$ ).

**Exhibit 8.1: MTMM, Scale Scores with SPQ Scores, Elementary School**

	Subject	IRT Scale Scores				SPQ Scores			
		ELA	Math	Science	Social Studies	ELA	Math	Science	Social Studies
IRT Scale Scores	ELA	1.00							
	Math	0.89	1.00						
	Science	0.89	0.87	1.00					
	Social Studies	0.91	0.87	0.90	1.00				
SPQ Scores	ELA	<b>0.73</b>	0.72	0.71	0.74	1.00			
	Math	0.73	<b>0.74</b>	0.71	0.73	0.92	1.00		
	Science	0.69	0.68	<b>0.69</b>	0.73	0.88	0.92	1.00	
	Social Studies	0.72	0.71	0.69	<b>0.74</b>	0.89	0.89	0.93	1.00

Minimum pairwise N: 546

**Exhibit 8.2: MTMM, Scale Scores and SPQ Scores, Middle School**

	Subject	IRT Scale Scores				SPQ Scores			
		ELA	Math	Science	Social Studies	ELA	Math	Science	Social Studies
IRT Scale Scores	ELA	1.00							
	Math	<i>0.86</i>	1.00						
	Science	<i>0.88</i>	<i>0.84</i>	1.00					
	Social Studies	<i>0.89</i>	<i>0.85</i>	<i>0.88</i>	1.00				
SPQ Scores	ELA	<b>0.69</b>	0.67	0.69	0.69	1.00			
	Math	0.71	<b>0.70</b>	0.71	0.72	<i>0.94</i>	1.00		
	Science	0.67	0.66	<b>0.69</b>	0.68	<i>0.89</i>	<i>0.91</i>	1.00	
	Social Studies	0.69	0.67	0.70	<b>0.72</b>	<i>0.90</i>	<i>0.90</i>	<i>0.92</i>	1.00

Minimum pairwise N: 557

**Exhibit 8.3: MTMM, Scales Scores and SPQ Scores, High School**

	Subject	IRT Scale Scores			SPQ Scores		
		ELA	Math	Biology	ELA	Math	Biology
IRT Scale Scores	ELA	1.00					
	Math	<i>0.83</i>	1.00				
	Biology	<i>0.87</i>	<i>0.82</i>	1.00			
SPQ Scores	ELA	<b>0.74</b>	0.69	0.75	1.00		
	Math	0.73	<b>0.72</b>	0.75	<i>0.91</i>	1.00	
	Biology	0.59	0.53	<b>0.65</b>	<i>0.68</i>	<i>0.71</i>	1.00

Minimum pairwise N: 385

In each MTMM table, the *convergent validity coefficients* (correlations between measurements of the same trait using different methods) are marked in bold. Most of the convergent validity coefficients range from 0.69 to 0.74 and certainly fall into an acceptable range. These high correlations demonstrate evidence for the validity of the SPQ; the three exhibits indicate that the SPQ and the actual test are essentially measuring the same trait and that the SPQ is a good indicator of performance on the test. The one exception is the high school biology assessment for which the SPQ and the IRT scale scores correlate at 0.65; the reason appears to lie with the biology SPQ score, as it shows noticeably low correlations with *all* the other variables, whether SPQ scores or IRT scale scores. The biology SPQ operates somewhat differently from the other assessments; this may be an interesting target for further investigation.

The *heterotrait-monomethod coefficients* in the monomethod triangles (correlations between measurements of different traits using the same method) are set in italics. These correlation

coefficients range between 0.82 and 0.91 for IRT scale scores and between 0.68 and 0.94 for SPQ scores. The high overall range of these correlations (with the exception of lower correlations involving SPQ scores in biology) indicates the presence of method variance. However, this is to be expected because the SPQ was not developed to measure the trait; instead, it only indicates the starting task on the test for measuring the trait. Such a result of high correlations in the monomethod triangles is not uncommon in MTMM studies (Fiske, 1995), and specific conditions offer themselves as causes for the present scenario. First, the different scale types—summed rating scales versus IRT scales of behavioral tests—are in themselves a source of method variation; second, the SPQ’s “can do” questions draw on the teacher’s memory of a student’s possible performance over the long term and are apt to differ in quality and veracity; and third, the IRT scale scores for the three subjects reflect the student’s performance in the testing situation and are subject to the student’s condition on the testing day.

The *heterotrait-heteromethod coefficients* appear in the tables in regular type. These correlation coefficients fall in the same range as the convergent validity coefficients, with values from 0.53 to 0.75 (again, with the lowest values involving the SPQ scores for high school biology). To confirm discriminant validity, the heterotrait-heteromethod correlations should be smaller than the convergent validity coefficients. However, these MTMMs support the notion that all of the SC-Alt’s subject area assessments except biology vary essentially along just a single dimension. Because the population of alternate assessment students is so *very* heterogeneous, the students’ general levels of cognitive functioning dominate the relationship among their scale scores.

### **Validity of the Student Placement Questionnaire (SPQ)**

AIR reviewed item data from the 2014 administration regarding the agreement between SPQ-recommended start points and the final observed start points. The purpose of the study was to determine the effectiveness of the SPQ in identifying the most appropriate starting task.

Administration of the SC-Alt uses the SPQ as a pre-assessment instrument to determine the most appropriate starting point in the assessment. The SPQ requires the teacher to evaluate the student on 12–15 “can do” statements addressing the student’s skills and knowledge in each content area on the basis of the teacher’s prior instructional knowledge of the student. A total score computed from the teacher’s SPQ responses indicates the initial starting task for the assessment.

The instructions for using the SPQ require teachers to adjust the starting point below the SPQ-recommended start point when the student is not successful on the first administered task. Alternatively, after reviewing the assessment, some teachers may have judged that a student needed to start at a higher level than recommended by the SPQ.

A summary of the results of the agreement between the SPQ-recommended start points and the observed start points for each content area and grade-band form is presented in Exhibits 8.4–8.7.<sup>3</sup> These results indicate that the agreement between the SPQ-recommended start point and the observed start point was 94% for ELA, 93% for mathematics, 91% science and

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<sup>3</sup> Data of students with missing SPQ scores were excluded from these exhibits.

biology, and 92% social studies administrations. Use of the SPQ pre-assessment score is only the first step in the procedure used by the test administrator in determining where the student should start the assessment. Since the test administrator is required to make adjustments based on the student's success on the first task and these adjustments are reflected in the agreement rates, the SPQ appears to be working very effectively for targeting the first task to begin the assessment process.

**Exhibit 8.4: Agreement Between SPQ and Observed Start Points by SPQ-Recommended Starting Tasks—ELA**

Observed Start Task	Elementary School				Middle School				High School				Overall
	Recommended Starting Task												
	1	3	6	Total	1	3	6	Total	1	3	6	Total	
Starting task consistent with SPQ	97.3%	96.9%	99.3%	95.3%	97.9%	91.5%	98.9%	94.4%	95.5%	89.9%	98.3%	91.2%	94.4%
Lower start task than recommended	0.0%	1.9%	0.6%	0.7%	0.0%	6.5%	1.0%	1.7%	0.0%	10.1%	1.7%	2.6%	1.4%
Higher start task than recommended	0.3%	0.9%	0.0%	0.3%	0.7%	2.0%	0.0%	0.5%	1.1%	0.0%	0.0%	0.2%	0.4%
Nonstandard start task	0.6%	0.3%	0.1%	0.3%	0.4%	0.0%	0.1%	0.1%	2.2%	0.0%	0.0%	0.5%	0.2%
No valid test items; no starting task	1.8%	0.0%	0.0%	0.4%	1.1%	0.0%	0.0%	0.2%	1.1%	0.0%	0.0%	0.2%	0.3%
Incomplete SPQ	0.0%	0.0%	0.0%	3.1%	0.0%	0.0%	0.0%	3.1%	0.0%	0.0%	0.0%	5.2%	3.3%
Inconsistent with SPQ	2.7%	3.1%	0.7%	4.7%	2.1%	8.5%	1.1%	5.6%	4.5%	10.1%	1.7%	8.8%	5.6%
ELA Total (N)	334	321	826	1528	281	246	896	1468	89	69	241	421	3417

**Exhibit 8.5: Agreement Between SPQ and Observed Start Points by SPQ-Recommended Starting Tasks—Mathematics**

Observed Start Task	Elementary School				Middle School				High School				Overall
	Recommended Starting Task												
	1	3	6	Total	1	3	6	Total	1	3	6	Total	
Starting task consistent with SPQ	96.1%	95.6%	98.5%	93.7%	95.8%	96.0%	97.3%	93.0%	96.2%	94.7%	92.9%	88.5%	92.8%
Lower start task than recommended	0.0%	3.3%	1.4%	1.5%	0.0%	3.3%	2.5%	2.1%	0.0%	5.3%	6.7%	4.8%	2.2%
Higher start task than recommended	0.7%	0.8%	0.0%	0.3%	1.9%	0.7%	0.0%	0.5%	0.0%	0.0%	0.0%	0.0%	0.4%
Nonstandard start task	0.7%	0.3%	0.1%	0.3%	1.1%	0.0%	0.2%	0.3%	1.3%	0.0%	0.4%	0.5%	0.3%
No valid test items; no starting task	2.6%	0.0%	0.0%	0.5%	1.1%	0.0%	0.0%	0.2%	2.5%	0.0%	0.0%	0.5%	0.4%
Incomplete SPQ	0.0%	0.0%	0.0%	3.7%	0.0%	0.0%	0.0%	3.9%	0.0%	0.0%	0.0%	5.8%	4.0%
Inconsistent with SPQ	3.9%	4.4%	1.5%	6.3%	4.2%	4.0%	2.7%	7.0%	3.8%	5.3%	7.1%	11.5%	7.2%
Math Total (N)	305	360	799	1520	262	274	882	1475	79	75	239	417	3412

**Exhibit 8.6: Agreement Between SPQ and Observed Start Points by SPQ-Recommended Starting Tasks—Science/Biology**

Observed Start Task	Elementary School				Middle School				High School				Overall
	Recommended Starting Task												
	1	3	7	Total	1	3	7	Total	1	3	7	Total	
Starting task consistent with SPQ	97.0%	96.4%	92.0%	90.7%	97.9%	96.9%	94.7%	91.4%	97.8%	95.9%	93.7%	91.3%	91.1%
Lower start task than recommended	0.0%	2.0%	5.5%	3.1%	0.0%	0.5%	4.0%	2.4%	0.0%	1.4%	3.2%	0.9%	2.4%
Higher start task than recommended	0.4%	1.6%	0.0%	0.5%	0.5%	2.6%	0.0%	0.6%	0.9%	1.4%	0.0%	0.7%	0.6%
Nonstandard start task	0.4%	0.0%	2.5%	1.3%	1.1%	0.0%	1.4%	1.0%	0.4%	1.4%	3.2%	1.2%	1.1%
No valid test items; no starting task	2.3%	0.0%	0.0%	0.6%	0.5%	0.0%	0.0%	0.1%	0.9%	0.0%	0.0%	0.5%	0.4%
Incomplete SPQ	0.0%	0.0%	0.0%	3.9%	0.0%	0.0%	0.0%	4.6%	0.0%	0.0%	0.0%	5.4%	4.4%
Inconsistent with SPQ	3.0%	3.6%	8.0%	9.3%	2.1%	3.1%	5.3%	8.6%	2.2%	4.1%	6.3%	8.7%	8.9%
Science/Biology Total (N)	263	248	488	1040	187	195	582	1010	231	74	95	423	2473

**Exhibit 8.7: Agreement Between SPQ and Observed Start Points by SPQ-Recommended Starting Tasks—Social Studies**

Observed Start Task	Elementary School				Middle School				Overall
	Recommended Starting Task								
	1	3	7	Total	1	3	7	Total	
Starting task consistent with SPQ	95.7%	94.5%	97.3%	92.2%	93.9%	95.7%	97.7%	91.4%	91.8%
Lower start task than recommended	0.0%	3.5%	0.2%	0.8%	0.0%	3.6%	0.6%	0.9%	0.8%
Higher start task than recommended	1.1%	1.5%	0.0%	0.5%	3.7%	0.7%	0.0%	0.7%	0.6%
Nonstandard start task	1.6%	0.5%	2.5%	1.9%	1.2%	0.0%	1.7%	1.3%	1.6%
No valid test items; no starting task	1.6%	0.0%	0.0%	0.3%	1.2%	0.0%	0.0%	0.2%	0.2%
Incomplete SPQ	0.0%	0.0%	0.0%	4.4%	0.0%	0.0%	0.0%	5.6%	5.0%
Inconsistent with SPQ	4.3%	5.5%	2.7%	7.8%	6.1%	4.3%	2.3%	8.6%	8.2%
Social Studies Total (N)	188	199	595	1027	163	140	660	1020	2047

## Start-Stop Analysis

Data from the 2014 SC-Alt were analyzed to address two questions concerning SC-Alt administration procedures and student performance:

1. How many tasks and items were administered to students who were started in the assessment at each of the three start points?
2. What was the achievement level performance of students who were started in the assessment at each of the three start points?

To address these questions, the task start point was identified for each student assessed by the 2014 administration of the SC-Alt for all content areas and grade-band forms. According to each task start point, the number of tasks and items administered and the achievement-level distribution were calculated and summarized.

SC-Alt test administrators were instructed to follow specific procedures concerning the use of the SPQ to determine task start points, the minimum number of tasks to be administered, and whether to continue the administration through additional tasks until the student is no longer able to respond successfully. These procedures are detailed in Appendix A and in the 2014 SC-Alt *Test Administration Manual*.

## Number of Tasks Administered

For ELA and mathematics, the minimum number of overall tasks to be administered is six tasks when the test administration is started at Task 1, or seven tasks when the administration begins at either Task 3 or Task 6. For science/biology, and social studies, the minimum number of overall tasks to be administered is seven tasks when the test administration is started at Task 1, or nine tasks when the administration begins at either Task 3 or Task 7. For assessments in science/biology and social studies, the tasks in positions 5, 8, and 12 are field-test tasks. In other words, the sets of seven or nine overall tasks to be administered translate into six or seven operational tasks, respectively.

The actual number of tasks administered to students in the ELA, mathematics, science/biology, and social studies content areas for each form level and task start point are presented in Exhibits 8.8–8.11. Note that these exhibits show only the cases for which the assessment started at one of the three standard starting points. For a few students, however, the assessment was begun at some nonstandard starting task. These cases are not included in Exhibits 8.8–8.11.

In general, most students were administered at least the minimum number of tasks; the distribution of actual tasks administered often exceeded the minimum required. In ELA and mathematics, 99% or more students were administered six or more tasks when started at Task 1; 97% or more students were administered seven or more tasks when started at Task 3 or Task 6. For science/biology and social studies, 95% or more students were administered seven or more tasks when started at Task 1; 96% or more students were administered nine or more tasks when started at Task 3 or Task 7.

Generally, fewer than 5% of students across forms and subjects were not administered the minimum number of tasks required. The largest percentage of these violations occurred with the social studies administration to the middle school students: Here 8 of the 170 students whose assessment started at Task 1 were administered fewer than the required seven tasks.

For ELA and mathematics, students whose assessment started at Task 1 were administered between 7.4 and 8.3 tasks on average, and their median number of administered tasks ranged between 6 and 7; students who started at Task 3 were administered between 8.2 and 9.3 tasks on average, with a median number of administered tasks between 8 and 10; students who started at Task 6 were administered 7 tasks on average, with a median number of administered tasks also as 7. For science/biology and social studies, students whose assessment started at Task 1 were administered between 8.4 and 9.3 tasks on average, and their median number of administered tasks was 7; students who started at Task 3 were administered between 11.1 and 11.8 tasks on average, with a median number of administered tasks between 11 and 13; students who started at Task 7 were administered 9 tasks on average, with a median number of administered tasks also as 9. These data indicate that, for both these groups of students, the tendency was to administer more than the minimum number of tasks needed.

These results show that a large majority of the students assessed during the 2014 spring SC-Alt administration were administered at least the minimum number of tasks, and in many instances the test administrators exposed the students to additional, more complex, and more difficult tasks beyond the minimal administration requirements.

**Exhibit 8.8: Number of Tasks Administered by Starting Task—ELA**

		Number of Tasks Administered											
Starting Task		<6	6	7	8	9	10	11	12	>12	Total Students	Mean Number of Tasks	Median Number of Tasks
<i>Elementary School</i>													
<b>1</b>	<b>N</b>	1	146	45	27	18	7	11	90		345	8.25	7
	<b>%</b>	0.29	42.32	13.04	7.83	5.22	2.03	3.19	26.09		100		
<b>3</b>	<b>N</b>	5	1	47	19	25	231	.	.		328	9.28	10
	<b>%</b>	1.52	0.3	14.33	5.79	7.62	70.43	.	.		100		
<b>6</b>	<b>N</b>	1	3	841	.	.	.	.	.		845		
	<b>%</b>	0.12	0.36	99.53	.	.	.	.	.		100	6.99	7
<i>Middle School</i>													
<b>1</b>	<b>N</b>	.	125	31	33	21	10	4	77		301	8.27	7
	<b>%</b>	.	41.53	10.3	10.96	6.98	3.32	1.33	25.58		100		
<b>3</b>	<b>N</b>	1	1	48	23	15	154	.	.		242	9.12	10
	<b>%</b>	0.41	0.41	19.83	9.5	6.2	63.64	.	.		100		
<b>6</b>	<b>N</b>	.	6	914	.	.	.	.	.		920	6.99	7
	<b>%</b>	.	0.65	99.35	.	.	.	.	.		100		
<i>High School</i>													
<b>1</b>	<b>N</b>	2	46	13	4	3	.	3	28		99	8.13	7
	<b>%</b>	2.02	46.46	13.13	4.04	3.03	.	3.03	28.28		100		
<b>3</b>	<b>N</b>	.	.	16	2	3	49	.	.		70	9.21	10
	<b>%</b>	.	.	22.86	2.86	4.29	70	.	.		100		
<b>6</b>	<b>N</b>	.	.	249	.	.	.	.	.		249	7	7
	<b>%</b>	.	.	100	.	.	.	.	.		100		
<i>Total</i>													
	<b>N</b>	10	328	2204	108	85	451	18	195		3399	7.68	7
	<b>%</b>	0.29	9.65	64.84	3.18	2.5	13.27	0.53	5.74		100		

**Exhibit 8.9: Number of Tasks Administered by Starting Task—Mathematics**

Starting Task	Number of Tasks Administered									Total Students	Mean Number of Tasks	Median Number of Tasks	
	<6	6	7	8	9	10	11	12	>12				
<i>Elementary School</i>													
<b>1</b>	<b>N</b>	.	150	52	19	16	5	5	69		316	7.89	7
	<b>%</b>	.	47.47	16.46	6.01	5.06	1.58	1.58	21.84		100		
<b>3</b>	<b>N</b>	3	3	66	33	7	256	1	.		369	9.19	10
	<b>%</b>	0.81	0.81	17.89	8.94	1.9	69.38	0.27	.		100		
<b>6</b>	<b>N</b>	.	4	819	.	.	.	.	.		823	7	7
	<b>%</b>	.	0.49	99.51	.	.	.	.	.		100		
<i>Middle School</i>													
<b>1</b>	<b>N</b>	1	127	57	33	9	25	6	18		276	7.4	7
	<b>%</b>	0.36	46.01	20.65	11.96	3.26	9.06	2.17	6.52		100		
<b>3</b>	<b>N</b>	5	4	107	77	32	73	.	.		298	8.16	8
	<b>%</b>	1.68	1.34	35.91	25.84	10.74	24.5	.	.		100		
<b>6</b>	<b>N</b>	3	2	887	.	.	.	.	.		892	6.99	7
	<b>%</b>	0.34	0.22	99.44	.	.	.	.	.		100		
<i>High School</i>													
<b>1</b>	<b>N</b>	.	50	12	6	7	2	.	12		89	7.4	6
	<b>%</b>	.	56.18	13.48	6.74	7.87	2.25	.	13.48		100		
<b>3</b>	<b>N</b>	3	.	21	6	6	55	.	.		91	8.92	10
	<b>%</b>	3.3	.	23.08	6.59	6.59	60.44	.	.		100		
<b>6</b>	<b>N</b>	.	.	233	.	.	.	.	.		233	7	7
	<b>%</b>	.	.	100	.	.	.	.	.		100		
<i>Total</i>													
	<b>N</b>	15	340	2254	174	77	416	12	99		3387	7.51	7
	<b>%</b>	0.44	10.04	66.55	5.14	2.27	12.28	0.35	2.92		100		

**Exhibit 8.10: Number of Tasks Administered by Starting Task—Science/Biology**

Starting Task	Number of Tasks Administered										Total Students	Mean Number of Tasks	Median Number of Tasks
	<6	6	7	8	9	10	11	12	>12				
<i>Elementary School Science</i>													
<b>1</b>	<b>N</b>	1	14	165	10	11	11	5	9	51	277	8.61	7
	<b>%</b>	0.36	5.05	59.57	3.61	3.97	3.97	1.81	3.25	18.41	100		
<b>3</b>	<b>N</b>	2	.	2	1	48	34	95	2	89	273	11.1	11
	<b>%</b>	0.73	.	0.73	0.37	17.58	12.45	34.8	0.73	32.6	100		
<b>7</b>	<b>N</b>	.	1	6	3	460	.	.	.	.	470	8.96	9
	<b>%</b>	.	0.21	1.28	0.64	97.87	.	.	.	.	100		
<i>Middle School Science</i>													
<b>1</b>	<b>N</b>	.	5	116	33	2	11	2	2	24	195	8.41	7
	<b>%</b>	.	2.56	59.49	16.92	1.03	5.64	1.03	1.03	12.31	100		
<b>3</b>	<b>N</b>	7	1	.	1	37	23	12	12	129	222	11.55	13
	<b>%</b>	3.15	0.45	.	0.45	16.67	10.36	5.41	5.41	58.11	100		
<b>7</b>	<b>N</b>	.	.	.	1	581	.	.	.	.	582	9	9
	<b>%</b>	.	.	.	0.17	99.83	.	.	.	.	100		
<i>Total</i>													
	<b>N</b>	10	21	289	49	1139	79	114	25	293	2019	9.44	9
	<b>%</b>	0.5	1.04	14.31	2.43	56.41	3.91	5.65	1.24	14.51	100		
<i>High School Biology</i>													
<b>1</b>	<b>N</b>	1	6	140	13	6	3	14	2	61	246	9.29	7
	<b>%</b>	0.41	2.44	56.91	5.28	2.44	1.22	5.69	0.81	24.8	100		
<b>3</b>	<b>N</b>	.	.	.	.	19	.	6	7	45	77	11.77	13
	<b>%</b>	.	.	.	.	24.68	.	7.79	9.09	58.44	100		
<b>7</b>	<b>N</b>	.	.	.	.	92	.	.	.	.	92	9	9
	<b>%</b>	.	.	.	.	100	.	.	.	.	100		
<i>Total</i>													
	<b>N</b>	11	27	429	62	1256	82	134	34	399	2434	9.49	9
	<b>%</b>	0.45	1.11	17.63	2.55	51.6	3.37	5.51	1.4	16.39	100		

**Exhibit 8.11: Number of Tasks Administered by Starting Task—Social Studies**

Starting Task	Number of Tasks Administered									Total Students	Mean Number of Tasks	Median Number of Tasks	
	<6	6	7	8	9	10	11	12	>12				
<i>Elementary School</i>													
<b>1</b>	<b>N</b>	.	7	95	29	8	4	3	8	40	194	9.09	7
	<b>%</b>	.	3.61	48.97	14.95	4.12	2.06	1.55	4.12	20.62	100		
<b>3</b>	<b>N</b>	1	1	5	.	37	18	19	5	121	207	11.6	13
	<b>%</b>	0.48	0.48	2.42	.	17.87	8.7	9.18	2.42	58.45	100		
<b>7</b>	<b>N</b>	.	.	2	3	597	.	.	.	.	602	8.99	9
	<b>%</b>	.	.	0.33	0.5	99.17	.	.	.	.	100		
<i>Middle School</i>													
<b>1</b>	<b>N</b>	.	8	83	14	12	12	5	3	33	170	9.13	7
	<b>%</b>	.	4.71	48.82	8.24	7.06	7.06	2.94	1.76	19.41	100		
<b>3</b>	<b>N</b>	.	.	4	.	33	20	6	4	80	147	11.42	13
	<b>%</b>	.	.	2.72	.	22.45	13.61	4.08	2.72	54.42	100		
<b>7</b>	<b>N</b>	.	1	.	.	686	.	.	.	.	687	9	9
	<b>%</b>	.	0.15	.	.	99.85	.	.	.	.	100		
<b>Total</b>													
	<b>N</b>	1	17	189	46	1373	54	33	20	274	2007	9.46	9
	<b>%</b>	0.05	0.85	9.42	2.29	68.41	2.69	1.64	1	13.65	100		

## Number of Items Administered

Since test administrators were instructed to administer all of the items in a task and each task contained approximately five items, the number of items administered was roughly proportional to the number of tasks administered. Exhibits 8.12–8.15 show the mean, median, and 25th and 75th percentile for the number of administered items, disaggregated by content area, form level, and task start point. Note that cases with nonstandard starting tasks are not included in Exhibits 8.12–8.15.

For ELA and mathematics, the median number of items administered to students starting at Task 1 ranged between 35 and 44; the median for Task 3 start points ranged between 48 and 62, and the median for Task 6 start points ranged between 39 and 42. For science/biology and social studies, the median number of items administered to students starting at Task 1 ranged between 37 and 44; the median for Task 3 start points ranged between 63 and 79, and the median for Task 7 start points ranged between 50 and 56. Students beginning at Task 6 or Task 7 were administered fewer and a smaller range of items than students starting at Task 3 since these students demonstrated more predictable performance (according to the SPQ results) and the end of the minimally required task range coincided with the end of the test. Students whose test administration began at Task 3 tended to have more items administered to them. In these cases, the administration of a content-area test was ended only when (1) the end of the test was reached or (2) the student could no longer respond successfully on a task (i.e., failed to obtain three or more points on the task).

**Exhibit 8.12: Number of Items Administered by Starting Task—ELA**

Grade-Band	Start Task	N	Mean	P25	Median	P75
Elementary School	1	345	51.4	38	44	73
	3	328	57.6	56	62	62
	6	845	41.9	42	42	42
	<b>TOTAL</b>	1518	47.5	42	42	55
Middle School	1	301	45.9	33	39	66
	3	242	51	45	56	56
	6	920	39.9	40	40	40
	<b>TOTAL</b>	1463	43	40	40	40
High School	1	99	44.9	33	38	67
	3	70	50.3	44	55	55
	6	249	40	40	40	40
	<b>TOTAL</b>	418	42.9	40	40	40

**Exhibit 8.13: Number of Items Administered by Starting Task—Mathematics**

Grade-Band	Start Task	N	Mean	P25	Median	P75
Elementary School	1	316	46.4	36	41	53.5
	3	369	55.4	47	61	61
	6	823	41.9	42	42	42
	TOTAL	1508	46.2	42	42	47
Middle School	1	276	43.6	36	42	47
	3	298	48.4	43	48	53
	6	892	38.9	39	39	39
	TOTAL	1466	41.7	39	39	43
High School	1	89	42.6	35	35	45
	3	91	51.8	41	58	58
	6	233	39	39	39	39
	TOTAL	413	42.6	39	39	41

**Exhibit 8.14: Number of Items Administered by Starting Task—Science/Biology**

Grade-Band	Start Task	N	Mean	P25	Median	P75
Elementary School	1	277	50.2	41	41	60
	3	273	63.5	59	63	73
	7	470	49.8	50	50	50
	TOTAL	1020	53.6	50	50	60
Middle School	1	195	52	44	44	50
	3	222	69.3	60	78	78
	7	582	52	52	52	52
	TOTAL	999	55.8	52	52	54
High School	1	246	55.6	42	42	71
	3	77	71.3	65	79	79
	7	92	52.9	53	53	53
	TOTAL	415	58	42	53	77

**Exhibit 8.15: Number of Items Administered by Starting Task—Social Studies**

Grade-Band	Start Task	N	Mean	P25	Median	P75
Elementary School	1	194	52.9	40	40	67
	3	207	71.2	63	79	79
	7	602	55.9	56	56	56
	TOTAL	1003	58.5	56	56	57
Middle School	1	170	50.4	37	37	56
	3	147	66.9	52	77	77
	7	687	55	55	55	55
	TOTAL	1004	55.9	55	55	55

## **Achievement Level of Students by Start Point**

Within a SC-Alt form, two or more tasks (consisting of an average of five items each) are to be used to assess the same standards at different levels of student communication and content complexity, and they are to be placed on the test form in locations that ensure that there is adequate content coverage of the standards regardless of the student's starting point in the assessment. Although tasks are ordered on the form based on student communication levels and average content complexity, items of both lower and higher complexity may appear in each task. This configuration presents items and tasks across the entire assessment providing students with opportunities to demonstrate proficiency. Each student's proficiency and resulting achievement level are determined by the student's performance on the specific group of items the student was administered. The calculation of student proficiency scores is described in Chapter 5. The distribution of achievement levels for students according to start task, form level, and content area is presented in Exhibit 8.16.

The table entries demonstrate interesting operational aspects of the leveled structure of the SC-Alt. Across content areas, students beginning the assessment at Task 1 are categorized as proficient (achievement Levels 3 and 4) at rates between 4% and 43%, with the lowest and highest percentage in elementary school (4%–43%), and the less varied in middle school (7%–39%) and high school (14%–36%). For students starting at Task 3, 39% to 95% of students across content areas are categorized as proficient; unlike students beginning with Task 1, large variation in proficiency rates is found among students starting at Task 3: 41%–94% proficient in elementary school, 39%–95% in middle school and 56%–78% in high school. Finally, for ELA and Mathematics, 96% to 100% of students starting at Task 6 tested as proficient; for science/biology and social studies, 82% to 100% of students starting at Task 6 tested as proficient.

### **Summary**

The purpose of the start-and-stop point analyses was to document the number of tasks and items students complete during the assessment and the performance levels that groups of students attain who enter the assessment at different start points. The results of these analyses demonstrate the effectiveness of the use of the SPQ and the test administration start and stop rules that are based on the student's performance during the assessment. Except in a few instances, all students were administered adequate numbers of tasks and items to assess the intended content.

The findings indicate that the SPQ start and stop rules were being followed for almost all tested students. A considerable proportion of tested students continued testing beyond the minimum required number of tasks to be administered. As a consequence, in each starting task group, there were students who tested in the proficient range (i.e., at achievement levels 3 or 4). Finally, students assigned to higher starting tasks showed a greater likelihood of testing in the proficient range. These results demonstrate that the tailored assessment design of the SC-Alt operates as expected.

**Exhibit 8.16: Achievement Level by Task Start Point, Form Level, and Content Area**

		Elementary School (ES)								Middle School (MS)								High School (HS)							
		Starting Task								Starting Task								Starting Task							
		1		3		6		TOTAL		1		3		6		TOTAL		1		3		6		TOTAL	
Subject	Ach. Level	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
ELA	Level 1	36	10.4	1	0.3	.	.	37	2.4	47	15.6	1	0.4	.	.	48	3.3	24	24.2	.	.	.	.	24	5.7
	Level 2	179	51.9	37	11.3	6	0.7	222	14.6	137	45.5	12	5	2	0.2	151	10.3	41	41.4	19	27.1	6	2.4	66	15.8
	Level 3	110	31.9	180	54.9	128	15.2	418	27.5	88	29.2	122	50.4	106	11.5	316	21.6	26	26.3	43	61.4	58	23.3	127	30.4
	Level 4	20	5.8	110	33.5	711	84.1	841	55.4	29	9.6	107	44.2	812	88.3	948	64.8	8	8.1	8	11.4	185	74.3	201	48.1
	Proficient	130	37.7	290	88.4	839	99.3	1259	82.9	117	38.9	229	94.6	918	99.8	1264	86.4	34	34.3	51	72.9	243	97.6	328	78.5
Math	Level 1	49	15.5	3	0.8	.	.	52	3.5	51	18.5	.	.	.	.	51	3.5	27	30.3	.	.	.	.	27	6.5
	Level 2	175	55.4	45	12.2	5	0.6	225	14.9	160	58	72	24.2	21	2.4	253	17.3	50	56.2	40	44	10	4.3	100	24.2
	Level 3	90	28.5	284	77	419	50.9	793	52.6	61	22.1	217	72.8	568	63.7	846	57.7	9	10.1	51	56	157	67.4	217	52.5
	Level 4	2	0.6	37	10	399	48.5	438	29.1	4	1.5	9	3	303	34	316	21.6	3	3.4	.	.	66	28.3	69	16.7
	Proficient	92	29.1	321	87	818	99.4	1231	81.6	65	23.6	226	75.8	871	97.7	1162	79.3	12	13.5	51	56	223	95.7	286	69.3
		1		3		7		TOTAL		1		3		7		TOTAL		1		3		7		TOTAL	
Science/ Biology	Level 1	67	24.2	3	1.1	.	.	70	6.9	80	41	3	1.4	.	.	83	8.3	54	22	.	.	.	.	54	13
	Level 2	90	32.5	14	5.1	2	0.4	106	10.4	86	44.1	98	44.1	37	6.4	221	22.1	104	42.3	17	22.1	5	5.4	126	30.4
	Level 3	88	31.8	117	42.9	74	15.7	279	27.4	17	8.7	68	30.6	110	18.9	195	19.5	40	16.3	17	22.1	12	13	69	16.6
	Level 4	32	11.6	139	50.9	394	83.8	565	55.4	12	6.2	53	23.9	435	74.7	500	50.1	48	19.5	43	55.8	75	81.5	166	40
	Proficient	120	43.3	256	93.8	468	99.6	844	82.8	29	14.9	121	54.5	545	93.6	695	69.6	88	35.8	60	77.9	87	94.6	235	56.6
Social Studies	Level 1	55	28.4	3	1.5	.	.	58	5.8	61	35.9	5	3.4	1	0.2	67	6.7								
	Level 2	132	68	120	58	94	15.6	346	34.5	97	57.1	85	57.8	120	17.5	302	30.1								
	Level 3	6	3.1	75	36.2	316	52.5	397	39.6	10	5.9	52	35.4	381	55.5	443	44.1								
	Level 4	1	0.5	9	4.4	192	31.9	202	20.1	2	1.2	5	3.4	185	26.9	192	19.1								
	Proficient	7	3.6	84	40.6	508	84.4	599	59.7	12	7.1	57	38.8	566	82.4	635	63.3								

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## **Appendices**

## **Appendix A: Starting and Stopping Rules for Using the Student Placement Questionnaire**

### **Directions for Determining the Starting and Concluding Tasks and Use of the Student Placement Questionnaire (SPQ), Spring 2014**

These directions guide you through the following processes:

- Completing the Student Placement Questionnaire (SPQ)
- Identifying the starting task in each content area
- Adjusting the starting task, if necessary
- Determining when to conclude the administration

### **Student Placement Questionnaire**

The SPQ is designed to identify the most appropriate starting task for each of your students in each content area of SC-Alt. You will use the SPQ to identify the most appropriate starting task for each student in the SC-Alt assessments in ELA, mathematics, science/biology, and social studies. Answer each SPQ item as accurately as you can based on your experience in the classroom with this student.

The SPQs are located in the Student Answer Folder along with the areas for recording the student's scores on each SC-Alt task. An example of a completed ELA SPQ is included at the end of these instructions.

For the spring 2014 administration, the number of tasks is not consistent across all content areas. The ELA and mathematics assessments include 12 tasks while the science and social studies assessments include 15 tasks. Therefore, some of the possible starting tasks for ELA and mathematics are different from the possible starting tasks for science and social studies. Review each set of instructions carefully to ensure that the correct starting task is identified.

### **Identifying the Starting Task for a Student in Each Content Area**

1. Bubble in your responses to the SPQ questions.
2. Count the number of bubbles you marked in each of the first three columns and write the totals in the blocks under each column.
3. In section 3 at the bottom of the page:
  - a. Write the column totals in the appropriate blocks.
  - b. Multiply each total by the specified multiplier and write the resulting totals in the blocks to the right.
  - c. Sum the three totals to obtain the total SPQ score. Write the SPQ score in the blocks and bubble in the SPQ score.

Please check your work and complete the bubble grids for the total SPQ score.

4. Find the total SPQ score in section 4 to determine the starting task for this student.

Note: Failure to complete the SPQ for each content area being assessed will result in test score invalidation.

**Administering the Starting Task and Completing the Administration**

After you identify the starting task for this student using the SPQ, follow these directions to administer the starting task and complete the administration.

Note that the SPQ provides the initial starting point for a student’s administration. It may be necessary to adjust the starting task based on the student’s level of success on the first task. Also, the administration should be continued beyond the minimum number of tasks when the student is responding successfully.

For ELA and mathematics, each must be administered a minimum of six tasks (including the starting task) if the student is started at Task 1 or a minimum of seven tasks if the student is started at Task 3 or Task 6. The minimum number of tasks and specific tasks that must be administered to each student for each starting level are specified in Exhibit A-1.

**Exhibit A-1: Minimum Task Ranges to Be Administered**

<b>ELA and Mathematics</b>	
<b>Starting task</b>	<b>Administer all items in at least these tasks</b>
Task 1	1–6
Task 3	3–9
Task 7	6–12

For science/biology and social studies, each student must be administered a minimum of seven tasks (including the starting task) if the student started at Task 1 or a minimum of nine tasks if the student is started at Task 3 or Task 7. The minimum number of tasks and the specific tasks that must be administered to each student for each starting level are specified in Exhibit A-2.

**Exhibit A-1: Minimum Task Ranges to Be Administered**

<b>Science and Social Studies</b>	
<b>Starting task</b>	<b>Administer all items in at least these tasks</b>
Task 1	1–7
Task 3	3–11
Task 7	7–15

It may be necessary to adjust the starting task based on the student’s level of success on the first task. Also, the administration should be continued beyond the minimum number of tasks when the student is responding successfully.

## **When the Student Does Not Respond Successfully on the First Task**

**Responding successfully** means students have obtained at least a total of three points on a task. Each task has at least four items. Responding successfully means that a student received at least three total points for all the items in the task combined. For example, a student may respond successfully by receiving three points on one item, two points on one item and one point on another item, or one point each on three different items. When a student does not receive three or more total points on a task, the student has not responded successfully on the task.

### **Instructions for ELA and Mathematics**

When a student is started at Task 3 or at Task 6 and does not respond successfully on the first task, the starting task was too difficult and the teacher must restart the student at the next lower starting point. Review the following examples for students starting at Task 1, Task 3, or Task 6:

Students who start at Task 1

- If the student does not respond successfully on Task 1:
  - No downward adjustment is possible.
  - The administration must progress from Task 1 through at least Task 6.

Students who start at Task 3

- If the student does not respond successfully on Task 3:
  - Restart the student at Task 1.
  - Continue the administration.
  - After Task 2, do not re-administer Task 3.
  - Continue administering tasks at least through Task 6.

Students who start at Task 6

- If the student does not respond successfully on Task 6:
  - Restart the student at Task 3.
  - Continue the administration.
  - After Task 5, do not re-administer Task 6.
  - Continue administering tasks at least through Task 9.

### **Instructions for Science/Biology and Social Studies**

When a student is started at Task 3 or at Task 7 and does not respond successfully on the first task, the starting task was too difficult and the teacher must restart the student at the next lower starting point. Review the following examples for students starting at Task 1, Task 3, or Task 7:

Students who start at Task 1

- If the student does not respond successfully on Task 1:
  - No downward adjustment is possible.
  - The administration must progress from Task 1 through at least Task 7.

Students who start at Task 3

- If the student does not respond successfully on Task 3:
  - Restart the student at Task 1.
  - Continue the administration.
  - After Task 2, do not re-administer Task 3.
  - Continue administering tasks through at least Task 7.

Students who start at Task 7

- If the student does not respond successfully on Task 7:
  - Restart the student at Task 3.
  - Continue the administration.
  - After Task 6, do not re-administer Task 7.
  - Continue administering tasks through at least Task 11.

### **When to Conclude the Administration**

If the student responds successfully on the last required task as specified in Table 1 or Table 2 (depending on the content area), continue administering the next task and subsequent tasks until the student no longer responds successfully on a task. (Remember that students must score at least three points to respond successfully.) By continuing the administration beyond the last required task when the student is responding successfully, you will provide the maximum opportunity for the student to demonstrate his or her knowledge and skills.

When the student does not respond successfully on the last required task, or at any point that the student does not respond successfully on additional tasks beyond the last required task (i.e., does not obtain three or more points on the task), you may conclude the administration.

### **Instructions for ELA and Mathematics**

Review the following examples for students starting at Task 1, Task 3, or Task 6:

Students who were administered Tasks 1–6

- Administer Task 6
  - If the student does not respond successfully on Task 6, conclude the administration.
  - If the student responds successfully on Task 6, administer Task 7.
  - If the student does not respond successfully on Task 7, conclude the administration.
  - If the student responds successfully on Task 7, administer Task 8.
  - Continue until the student can no longer respond successfully to a task.

Students who were administered Tasks 3–9

- Administer Task 9
  - If the student does not respond successfully on Task 9, conclude the administration.
  - If the student responds successfully on Task 9 administer Task 10.
  - If the student does not respond successfully on Task 10, conclude the administration.
  - If the student responds successfully on Task 10, administer Task 11.
  - Continue until the student can no longer respond successfully to a task.

Students who were administered Tasks 6–12

- The assessment is completed.

### **Instructions for Science/Biology and Social Studies**

Review the following examples for students starting at Task 1, Task 3, or Task 7:

Students who were administered Tasks 1–7

- Administer Task 7
  - If the student does not respond successfully on Task 7, conclude the administration.
  - If the student responds successfully on Task 7, administer Task 8.
  - If the student does not respond successfully on Task 8, conclude the administration.
  - If the student responds successfully on Task 8, administer Task 9.
  - Continue until the student can no longer respond successfully to a task.

Students who were administered Tasks 3–11

- Administer Task 11
  - If the student does not respond successfully on Task 11, conclude the administration.
  - If the student responds successfully on Task 11, administer Task 12.
  - If the student does not respond successfully on Task 12, conclude the administration.
  - If the student responds successfully on Task 12, administer Task 13.
  - Continue until the student can no longer respond successfully to a task.

Students who were administered Tasks 7–15

- The assessment is completed.

Note: If the last required task is marked as Access Limited, the test administrator should skip the task if applicable to the particular student and provide the student the opportunity to attempt the next task.

Failure to follow the rules for starting and concluding the administration, including not dropping back to an earlier start point when appropriate, will result in test score invalidation.

## SC - ALT STUDENT PLACEMENT QUESTIONNAIRE - ELA (ENGLISH LANGUAGE ARTS)

Follow steps 1-4 to complete the SPQ and identify the starting task.

**(1) Please darken the bubble (●) that corresponds to the most appropriate response for this student. Mark only one response for each item. Please mark a response for all items below. Use a No. 2 pencil only.**

	No, she/he cannot do this		
	With physical prompting/hand-over-hand		
	With verbal/gestural prompting		
	Independently		

**In reading, can this student:**

- |   |                       |                                  |                                  |                                  |
|---|-----------------------|----------------------------------|----------------------------------|----------------------------------|
| 1. Attend to text read aloud? .....                       | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/>            | <input type="radio"/>            |
| 2. Recall details of text read aloud? .....               | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/>            | <input type="radio"/>            |
| 3. Recognize some high-frequency written words? .....     | <input type="radio"/> | <input type="radio"/>            | <input checked="" type="radio"/> | <input type="radio"/>            |
| 4. Draw conclusions or make inferences about texts? ..... | <input type="radio"/> | <input type="radio"/>            | <input type="radio"/>            | <input checked="" type="radio"/> |

**In writing, can this student:**

- |   |                       |                                  |                                  |                                  |
|---|-----------------------|----------------------------------|----------------------------------|----------------------------------|
| 5. Write his or her name using a pencil, name stamp, letter titles, or other means? ..... | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/>            | <input type="radio"/>            |
| 6. Use objects, pictures, and/or picture symbols to write in any format? .....            | <input type="radio"/> | <input type="radio"/>            | <input checked="" type="radio"/> | <input type="radio"/>            |
| 7. Copy, trace, or print letters? .....   | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/>            | <input type="radio"/>            |
| 8. Use oral language and/or letters and words to write? .....                             | <input type="radio"/> | <input type="radio"/>            | <input type="radio"/>            | <input checked="" type="radio"/> |

**In communicating, can this student:**

- |  |                                  |                                  |                       |                       |
|--|----------------------------------|----------------------------------|-----------------------|-----------------------|
| 9. Listen (i.e., demonstrate receptive behavior) and respond? .....  | <input checked="" type="radio"/> | <input type="radio"/>            | <input type="radio"/> | <input type="radio"/> |
| 10. Participate in conversations by responding appropriately? .....  | <input type="radio"/>            | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 11. Use language to express a preference, opinion, or viewpoint? .....   | <input type="radio"/>            | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 12. Recognize and understand the meaning of environmental signs (e.g., street signs, store signs, school signs)? ..... | <input type="radio"/>            | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> |

**(2) Write in the total number of bubbles you marked in each column** 1 7 2

Col.1 Col.2 Col.3

**(3) Calculate the SPQ total score**

- (a) write the column totals from (2) in (a) below  
 (b) multiply and write the results in (b) below  
 (c) sum the results from (b) and write the sum in (c)

	(a)		(b)											
Column 1 Total	1	x 3 =	3	<table border="1" style="margin: 0 auto;"> <tr><td>0</td></tr> <tr><td>1</td></tr> <tr><td>2</td></tr> <tr><td>3</td></tr> <tr><td>4</td></tr> <tr><td>5</td></tr> <tr><td>6</td></tr> <tr><td>7</td></tr> <tr><td>8</td></tr> <tr><td>9</td></tr> </table>	0	1	2	3	4	5	6	7	8	9
0														
1														
2														
3														
4														
5														
6														
7														
8														
9														
Column 2 Total	7	x 2 =	14											
Column 3 Total	2	x 1 =	2											
(c) Total SPQ Score =				19										

**(4) Identify the starting task for this student using the SPQ total score from step (3).**

If the total score is in this range	Start at this task	Administer all items in <u>at least</u> these tasks
0-11	Task 1	1-6
12-22	Task 3	3-9
23-36	Task 6	6-12

## SC - ALT STUDENT PLACEMENT QUESTIONNAIRE - SCIENCE

Follow steps 1-4 to complete the SPQ and identify the starting task.

**(1) Please darken the bubble (●) that corresponds to the most appropriate response for this student. Mark only one response for each item. Please mark a response for all items below. Use a No. 2 pencil only.**

	No, she/he cannot do this		
With physical prompting/hand-over-hand	With verbal/gestural prompting	Independently	

<b>In the domain of <u>scientific inquiry</u>, can this student:</b>				
1. Use senses to identify objects and events? .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Understand and communicate simple data through drawings, tables, graphs, and/or explanations? .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>In the domain of <u>organisms, habitats, and life cycles</u>, can this student:</b>				
3. Differentiate between living and nonliving? .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Identify structures that help plants or animals survive in their environment? .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>In the domain of <u>weather</u>, can this student:</b>				
5. Identify the appropriate clothes to wear and/or safety precautions to take during severe weather? .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Retrieve weather information from weather maps, charts, or tools? .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>In the domain of <u>Earth and space science</u>, can this student:</b>				
7. Recognize the sun, moon, or Earth? .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Relate the sun and Earth to the patterns of day and night and seasons? .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>In the domain of <u>Earth materials and change</u>, can this student:</b>				
9. Describe water by observable properties (e.g., feels wet, flows downhill, pours)? .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Classify rocks, sand, and soil by physical appearance and properties? .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>In the domain of <u>matter and energy</u>, can this student:</b>				
11. Describe or identify materials as solids, liquids, and gases? .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. Describe how materials can change with heating, cooling, cutting, and bending? .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>In the domain of <u>force and motion</u>, can this student:</b>				
13. Distinguish position as high or low, near or far, and above or below? .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. Describe motion of an object in terms of speed and direction? .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>(2) Write in the total number of bubbles you marked in each column</b>	Col. 1	Col. 2	Col. 3	Col. 4

Col. 1 Col. 2 Col. 3

**(3) Calculate the SPQ total score**

- (a) write the column totals from (2) in (a) below
- (b) multiply and write the results in (b) below
- (c) sum the results from (b) and write the sum in (c)

	(a)		(b)																							
Column 1 Total	<input style="width: 40px;" type="text"/>	x 3 =	<input style="width: 40px;" type="text"/>	+	<input style="width: 40px;" type="text"/>	<table border="1" style="margin: auto;"> <tr><td>0</td><td>0</td></tr> <tr><td>1</td><td>1</td></tr> <tr><td>2</td><td>2</td></tr> <tr><td>3</td><td>3</td></tr> <tr><td>4</td><td>4</td></tr> <tr><td>5</td><td>5</td></tr> <tr><td>6</td><td>6</td></tr> <tr><td>7</td><td>7</td></tr> <tr><td>8</td><td>8</td></tr> <tr><td>9</td><td>9</td></tr> </table>	0	0	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9
0	0																									
1	1																									
2	2																									
3	3																									
4	4																									
5	5																									
6	6																									
7	7																									
8	8																									
9	9																									
Column 2 Total	<input style="width: 40px;" type="text"/>	x 2 =	<input style="width: 40px;" type="text"/>	+	<input style="width: 40px;" type="text"/>																					
Column 3 Total	<input style="width: 40px;" type="text"/>	x 1 =	<input style="width: 40px;" type="text"/>	+	<input style="width: 40px;" type="text"/>																					
<b>(c) Total SPQ Score =</b>						<input style="width: 40px;" type="text"/>																				

**(4) Identify the starting task for this student using the SPQ total score from step (3).**

If the total score is in this range	Start at this task	Administer all items in <u>at least</u> these tasks
0-10	Task 1	1-7
11-21	Task 3	3-11
22-42	Task 7	7-15

## Appendix B: Scoring Audits and Analysis of Second Rater Data from the Spring 2014 Operational Administration

A second rater study was conducted to audit scoring accuracy and classification consistency for the spring 2014 administrations of the SC-Alt in ELA. **Scoring accuracy** refers to the degree to which teachers follow scaffolding and scoring directions correctly and assign correct scores to student responses. **Classification consistency** refers to the degree to which students are assigned to the same performance levels based on item scores by test administrators and second raters. This appendix describes the sampling procedures, the identified sample of students, and the results for the attained sample of completed second rater administrations.

### Sampling Procedures

The 2014 sampling procedure was designed to assign second raters to approximately one third of unique test administrators (TA), which were about 10% of students in each school district for ELA. For districts that have one or two TAs, one TA was assigned a second rater. Within a district, approximately one third of TAs were randomly sampled in schools that had one or two TAs. In each school that had three or more TAs, approximately one third of TAs were randomly sampled. TAs who were sampled in the spring 2013 administration were excluded from 2014 sampling.

For each TA in the sample, one of his or her students was randomly selected. A sample of students was identified for second rater assessment so that (a) all districts implementing the SC-Alt would be required to assign a second rater to at least one student administration and (b) the total number of audited test administrations per district would be based on the number of teachers involved in the assessment for each district. The sampled students had their ELA item responses scored simultaneously by a second rater who was present during the test administration.

The number of test administrations audited from the districts is shown in Exhibit B-1.

**Exhibit B-1: Distribution of Second Rater Sample Records across Districts—by Test Form**

Grade-Band	# of Students	# of Districts
Elementary School	1	23
	2	10
	3	7
	4	2
	5	1
	6	2
Middle School	1	29
	2	6
	3	3
	4	6
	5	2

	6	1
High School	1	36
	2	12
	3	3
	7	1

Based on the sampling plan and the numbers of pre-identified students coded for each district for the 2014 administration, the frequency distribution of test administrations sampled per district was as follows:

**Elementary School: Second Rater**

- 1 test administration—23 districts
- 2–5 test administrations—20 districts
- 6–10 test administrations—2 districts

**Middle School: Second Rater**

- 1 test administration—29 districts
- 2–5 test administrations—17 districts
- 6–10 test administrations—1 districts

**High School: Second Rater**

- 1 test administration—36 districts
- 2–5 test administrations—15 districts
- 6-10 test administrations—1 districts

The sampling of students and teachers was conducted from the January 2014 precode file, which was the pre-identification file for the spring 2014 SC-Alt administration. The sampling was conducted by AIR, and the TAs and students identified for the second rater assignment were assembled in the second rater sample file that was sent to SCDE for approval. The approved second rater sample file was used for the production of materials and district notification.

**Analysis of Second Rater (SR) Data**

During the spring 2014 administration of the SC-Alt, a total of 255 administrations had second rater data collected. Of these cases, 89 were collected from elementary school administrations; 90 from middle school; and 76 from high school. The spring 2014 second rater study was applied to ELA assessments only. These administrations involved a second rater observer independently scoring the administration along with the test administrator (TA). The scoring data from the second rater was recorded on a separate answer folder. The official TA scoring data and the second rater data were compared by the contractor to conduct the scoring consistency and classification consistency analyses reported in this technical report. Exhibit B-2 displays the student demographics of the second rater sample broken down by grade-band.

**Exhibit B-2: Demographic Frequencies for the Second Rater Data Samples—by Test Form**

	Elementary School		Middle		High	
	N	%	N	%	N	%
<b>STUDENT'S ETHNICITY</b>						
Missing	.	.	.	.	.	.
Asian	2	2.25	.	.	.	.
African American	49	55.06	46	51.11	40	52.63
Hispanic	8	8.99	6	6.67	5	6.58
American Indian/Alaska Native	.	.	.	.	.	.
Multi-Race	4	4.49	1	1.11	4	5.26
Native Hawaiian/Other Pacific Islander	.	.	1	1.11	.	.
White	26	29.21	36	40	27	35.53
<b>STUDENT'S GENDER</b>						
Female	31	34.83	23	25.56	24	31.58
Male	58	65.17	67	74.44	52	68.42
<b>ESL (LANGUAGE)</b>						
Pre-Functional	7	7.87	5	5.56	3	3.95
English Speaker II	81	91.01	84	93.33	73	96.05
Unknown	.	0	.	0	.	0
<b>ELIGIBLE FOR FREE OR REDUCED-PRICE LUNCH</b>						
Free Meals	63	70.79	60	66.67	51	67.11
Reduced	3	3.37	9	10	7	9.21
Full-Pay Meals	23	25.84	21	23.33	18	23.68
<b>EFA GRADE (REPORTED GRADE FOR FUNDING)</b>						
2	6	6.74	.	.	.	.
3	29	32.58	.	.	.	.
4	36	40.45	.	.	.	.
5	18	20.22	12	13.33	.	.
6	.	.	29	32.22	.	.
7	.	.	28	31.11	1	1.32
8	.	.	18	20	3	3.95
9	.	.	2	2.22	24	31.58
10	.	.	1	1.11	47	61.84
11	.	.	.	.	1	1.32
<b>COMPLETION STATUS: ELA</b>						
Attempted	89	100	90	100	74	97.37
Test Not Valid: Student received fewer than 23 scored responses	.	.	.	.	2	2.63

Special Status						
<b>Migrant Status</b>	.	0	.	0	.	0
<b>Home Schooled</b>	.	.	1	1.11	.	.
<b>Medical Homebound</b>	.	.	.	.	.	.
Student Disability						
<b>Missing</b>	.	0	.	0	.	0
<b>Autism</b>	25	28.09	24	26.67	9	11.84
<b>Deaf/Blindness</b>	.	.	.	.	.	.
<b>Developmental Delay</b>	8	8.99	.	.	.	.
<b>Emotional Handicapped</b>	.	.	1	1.11	1	1.32
<b>Educable Mentally Disability</b>	22	24.72	29	32.22	15	19.74
<b>Hearing Handicapped</b>	.	.	1	1.11	1	1.32
<b>Learning Disability</b>	2	2.25	1	1.11	4	5.26
<b>Multiple Disable</b>	.	.	.	.	2	2.63
<b>Other Health Impaired</b>	6	6.74	4	4.44	2	2.63
<b>Orthopedically Handicapped</b>	1	1.12	3	3.33	2	2.63
<b>Profoundly Mentally Handicapped</b>	7	7.87	5	5.56	9	11.84
<b>Speech</b>	3	3.37	.	.	.	.
<b>Traumatic Brain Injury</b>	1	1.12	.	.	.	.
<b>Trainable Mental Disability</b>	14	15.73	20	22.22	31	40.79
<b>Visually Handicapped</b>	.	.	2	2.22	.	.
<b>TOTAL</b>	89	100	90	100	76	100

When the attained second rater samples are compared to the “assessed population” (see Exhibit 3.4), the following statements can be made:

By form:

- The attained sample approximates the expected number of students for each form: Elementary students make up 35% of the sample, middle school students 35%, and high school students make up 30% of the sample.

By the Individualized Education Program (IEP) disability code:

The important primary disabilities are profound (severe), trainable (moderate), and educable (mild) mental disability, and autism. If any of the mental disabilities were coded together with autism, then only the mental disability was reported. The other rows in the table show additional disabilities coded by the test administrators.

Profound (severe) Mental Disability was sampled similarly to the expectation across forms (sampled%–overall%) (elementary school: 8%–6%, middle school: 6%–9%, and high school: 12%–11%).

- Trainable (moderate) Mental Disability was sampled at a similar rate (16%, 22%, and 41%) to the expectation (19%, 27%, and 37%).
- Educable (mild) Mental Disability was sampled at a similar rate (25%, 32%, and 20%) to the expectation (26%, 29%, and 21%).
- Autism was sampled at a similar rate (28%, 27%, and 12%) to the expectation (30%, 24%, and 20%).

By other demographic variables:

For other demographic variables, the proportions in the second rater sample generally correspond to those seen in the total assessed population when data were available.

- In the sample, African American (51%–55%),<sup>4</sup> Asian (0%–2%), Hispanic (7%–9%), White (29%–40%), and Multi-Race (1%–5%) ethnicities were reported, representing the majority of ethnicities in the total assessed population. These percentages evidence some variability around the corresponding population values as a result of the small sample sizes. One of the largest discrepancies is that the second rater sample does not effectively represent the 40% White Elementary school students.
- Gender is distributed as approximately one to three males for each female.
- “English Speaker II” (91% to 96%) in the sample reflects the percentage of students in the assessed population.
- Between 67% and 71% of students in the sample were eligible for Free Lunch, approximately the same as in the total population. A small group of students in the sample was eligible for Reduced Lunch (3%-10%), which is similar to the assessed population (7% to 10%).
- None of the students in the attained second rater sample were medically homebound or migrant, but one student was home-schooled.

The attained second rater sample (Exhibit B-2) appears to reasonably represent the full population (Exhibit 3.4). The demographic variables of interest are present in the attained sample data within acceptable ranges of the assessed population.

### **Item Agreement Analysis**

Within each grade-band, the absolute difference between test administrator (TA) scores and second rater (SR) item scores for each item was computed. Scores that did not differ between TA and SR are noted as “equal”; scores differing by  $\pm 1$  score point were noted as “adjacent.” Scores differing by more than  $\pm 1$  point were flagged as “discrepant.” The agreement data are summarized by grade-band in Exhibit B-3, where values indicate the average percentage of items falling within each agreement category for which there were valid matched responses across TAs and SRs.

For the elementary school form, the second rater audit showed 98% of items scored as “equal” between the TA and SR, “adjacent” ratings were the next most prevalent outcome (at 2%), and “discrepant” ratings were the least prevalent result (0%).

On the middle school form, the second rater study showed a pattern similar to the elementary form: 99% of the item scores matched as “equal,” 1% as “adjacent,” and 0% as “discrepant.”

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<sup>4</sup> The percentage range is reported across all three subsamples—for the elementary school, middle school, and high school science/biology assessments.

On the high school form, the second rater study yielded the same pattern for mathematics: “Equal” ratings again account for the largest proportion of cases (99%), “adjacent” is the next most prevalent (1%), and finally “discrepant” (0%).

**Exhibit B-3: Average Item Agreement Statistics by Method, Grade-Band, and Subject**

Subject	Agreement	Response					
		Elementary School		Middle School		High School	
		Count	%	Count	%	Count	%
ELA	Equal	4169	98.3	3857	98.7	3148	98.8
	Adjacent	62	1.5	49	1.3	28	0.9
	Discrepant	9	0.2	0	0.0	11	0.3

**Classification Consistency Analysis (as distinct from scoring consistency as discussed in the previous section)**

The reported performance levels for each student are derived from a scale score to performance level conversion process. Scale scores are produced based on conversions from the raw scores assigned by the TA. From these scale scores, students were assigned to one of four performance levels (i.e., Levels 1, 2, 3, or 4) within each grade-band and content area assessment. The correspondence between reported (TA) performance levels and SR performance levels was assessed according to the kappa and weighted kappa coefficients. In particular, consistency was assessed through the *weighted kappa statistic* (Agresti, 1990; Spitzer, Cohen, Fleiss, & Endicott, 1967), which is appropriate for ordered categories:

$$\kappa_w = \frac{\sum \sum w_{ij} \pi_{ij} - \sum \sum w_{ij} \pi_{i+} \pi_{+j}}{1 - \sum \sum w_{ij} \pi_{i+} \pi_{+j}},$$

where  $i$  is the category assigned by the TA,  $j$  is the category assigned by the SR,  $w_{ij} = 1 - (i - j)^2 / (I - 1)^2$  are the weights,  $\pi_{ij}$  is the probability of being classified as  $ij$ , and “+” indicates agreement between categories. Kappa equals 0 when the agreement is that expected by chance, and kappa equals 1 when there is perfect agreement among raters.

Under the current condition, it must be noted that not all cases included in this analysis contained complete data. The “N” rows of Exhibit B-4 indicate the *effective sample size* (where “n” is the count of valid TA administrations with complete SR item scores). For these realized samples, there is a high level of agreement: The weighted kappa coefficients range between 0.98 and 0.99, and their 95% confidence intervals fall within  $\pm 0.01$  of the point estimates.

**Exhibit B-4: Agreement Statistics by Method, Subject, and Grade-Band**

Subject	Statistic	Second Rater		
		Elementary	Middle	High
ELA	N	89	90	76
	$k_w$	0.99	0.99	0.98
	95% CI	0.99-1	0.99-1	0.98-0.99

## **Summary**

TA and second rater assignments of students to performance levels show high levels of agreement, as weighted kappa typically ranges from 0.98 to 0.99. Further, the 95% confidence intervals show that, while sample sizes for the current calculations may be small, the agreement indices are significantly greater than chance agreement and often approach 1.00. Based on the current evidence, the second rater results affirm that the SC-Alt was accurately scored by the test administrators.

## Appendix C: Descriptions of Achievement Levels (DALs)

Exhibit C-1: English Language Arts Descriptions of Achievement Levels

Performance Level	ELA Achievement Level Definitions	Grades 3–5	Grades 6–8	Grade 10
1	Students performing at level 1 demonstrate emerging academic skills and competencies in reading, writing, and communication.	<p>Students performing at level 1 should be able to</p> <ul style="list-style-type: none"> <li>listen (as evidenced by facial expressions, gestures, or sounds) to a variety of text read aloud;</li> <li>point or eye gaze to objects, pictures, or letters to complete a writing activity;</li> <li>engage (using facial expressions, gestures, or sounds) in conversations focused on objects in the immediate surroundings;</li> <li>listen (as evidenced by facial expressions gestures or sounds) to a speaker.</li> </ul>	<p>Students performing at level 1 should be able to</p> <ul style="list-style-type: none"> <li>point or eye gaze to objects or pictures related to a variety of grade appropriate or adapted text focused on concrete concepts, read aloud;</li> <li>point or eye gaze to objects, pictures, or letters to create a simple composition;</li> <li>engage in conversations focused on events in the immediate surroundings as evidenced by facial expressions, gestures, or sounds;</li> <li>listen to a speaker as evidenced by facial expressions, gestures, without interrupting.</li> </ul>	<p>Students performing at level 1 should be able to</p> <ul style="list-style-type: none"> <li>listen to a variety of grade appropriate/adapted texts read aloud as evidenced by facial expressions, gestures, or sounds;</li> <li>point or eye gaze to objects, pictures, or letters to complete more complex written products;</li> <li>engage in conversations focused on objects or events outside the immediate surroundings as evidenced by facial expressions, gestures, or sounds;</li> <li>listen and respond to a speaker.</li> </ul>
2	Students performing at level 2 demonstrate foundational academic skills and competencies in reading, writing, and communication.	<p>Students performing at level 2 should be able to</p> <ul style="list-style-type: none"> <li>tell or show what a grade appropriate or adapted text, which contains high frequency words, is about;</li> <li>identify individual words/picture symbols;</li> <li>identify story elements (e.g., main idea, events, setting, and characters);</li> <li>use oral and written language to describe;</li> <li>select from a list of topics to generate ideas for written communication;</li> <li>listen to a speaker without interrupting;</li> <li>respond appropriately in conversations.</li> </ul>	<p>Students performing at level 2 should be able to</p> <ul style="list-style-type: none"> <li>tell or show what text that requires only literal interpretation is about (using objects, pictures, or words);</li> <li>read a variety of grade appropriate/adapted texts (e.g., recipes or advertisements);</li> <li>identify story elements (e.g., main idea, events, setting, characters, and conflict);</li> <li>make connections within and between texts;</li> <li>use oral and written language to explain;</li> <li>select from a list of topics to generate multiple ideas for written communication;</li> <li>focus attention on a speaker and listen without interrupting;</li> <li>engage in conversations by answering direct questions about familiar situations;</li> <li>follow oral and/or written one-step directions.</li> </ul>	<p>Students performing at level 2 should be able to</p> <ul style="list-style-type: none"> <li>tell or show what a grade-appropriate or adapted text that requires simple inferences is about</li> <li>read a variety of texts (e.g. recipes, advertisements, schedules, and newspapers)</li> <li>identify story elements (e.g., main idea, events, setting, characters, conflict, and plot);</li> <li>gather meaning from graphic representations;</li> <li>use oral and written language to explain, inform, and describe;</li> <li>generate ideas for written communication;</li> <li>edit own writing;</li> <li>engage in conversations by answering direct questions about the immediate environment or other familiar surroundings.</li> </ul>

Performance Level	ELA Achievement Level Definitions	Grades 3–5	Grades 6–8	Grade 10
3	Students performing at level 3 demonstrate increasing academic skills and competencies in reading, writing, and communication.	<p>Students performing at level 3 should be able to</p> <ul style="list-style-type: none"> <li>identify story elements in text (e.g., characters, settings, events, cause and effect, and problem solution);</li> <li>read words and simple sentences;</li> <li>generate an idea and use words, pictures, or oral language to write;</li> <li>follow one-step oral or signed directions;</li> <li>communicate agreement or disagreement appropriately.</li> </ul>	<p>Students performing at level 3 should be able to</p> <ul style="list-style-type: none"> <li>identify and recall details in text including main idea and characters;</li> <li>draw conclusions and make simple predictions and inferences about the text;</li> <li>determine meaning of unfamiliar words;</li> <li>generate multiple ideas by selecting from a list and use words, pictures, or oral language to write;</li> <li>initiate conversation about immediate surroundings.</li> </ul>	<p>Students performing at level 3 should be able to</p> <ul style="list-style-type: none"> <li>make connections with text (plot, characters, setting);</li> <li>make inferences about events in text;</li> <li>understand multiple meanings of words;</li> <li>compare and contrast story elements from different stories;</li> <li>discriminate fact from fiction;</li> <li>generate an idea and use words, pictures, or oral language to write;</li> <li>follow directions to complete a task;</li> <li>initiate conversations about immediate surroundings or other familiar topics.</li> </ul>
4	Students performing at level 4 demonstrate and apply academic skills and competencies in reading, writing, and communication.	<p>Students performing at level 4 should be able to</p> <ul style="list-style-type: none"> <li>identify story elements such as the main idea and cause and effect;</li> <li>draw conclusions and make predictions about text;</li> <li>read and understand the main idea of a simple paragraph;</li> <li>create and edit personal written products;</li> <li>follow two-step oral or signed directions;</li> <li>take turns appropriately during conversation or discussion.</li> </ul>	<p>Students performing at level 4 should be able to</p> <ul style="list-style-type: none"> <li>recognize and recall details in text, including the main idea, plot, characters, and setting;</li> <li>draw conclusions and make predictions and inferences about the text;</li> <li>read and understand the main idea of a simple paragraph;</li> <li>explain word meanings;</li> <li>create and edit personal written products;</li> <li>follow oral/signed or written directions;</li> <li>initiate and retell conversations.</li> </ul>	<p>Students performing at level 4 should be able to</p> <ul style="list-style-type: none"> <li>recognize and recall details in text, including the main idea, plot, characters, and setting;</li> <li>draw conclusions, and make predictions and inferences about the text;</li> <li>read and understand the main idea of a short story;</li> <li>use context clues to understand the meaning of unknown words;</li> <li>make connections within and between texts and to prior knowledge, other texts, and the world;</li> <li>create and edit personal written products;</li> <li>use graphic representations as sources of information.</li> </ul>

## Exhibit C-2: Mathematics Descriptions of Achievement Levels

Performance Level	Mathematics Achievement Level Definitions	Grades 3–5	Grades 6–8	Grade 10
1	Students performing at level 1 demonstrate emerging academic skills and competencies in mathematics.	<p>Students performing at level 1 should be able to</p> <ul style="list-style-type: none"> <li>manipulate one concrete object;</li> <li>observe that two geometric figures have the same attributes;</li> <li>recognize attributes of objects, such as length and weight.</li> </ul>	<p>Students performing at level 1 should be able to</p> <ul style="list-style-type: none"> <li>recognize the concept of one in counting objects;</li> <li>recognize that two geometric figures have the same attributes;</li> <li>recognize attributes of objects, such as length, weight, and size/volume.</li> </ul>	<p>Students performing at level 1 should be able to</p> <ul style="list-style-type: none"> <li>recognize the concept of one more in counting objects;</li> <li>match geometric figures that have the same attributes;</li> <li>respond to positional concepts such as on top of or under, off-on, above and below;</li> <li>match objects by one attribute such as length, weight, and size/volume.</li> </ul>
2	Students performing at level 2 demonstrate foundational academic skills and competencies in mathematics.	<p>Students performing at level 2 should be able to</p> <ul style="list-style-type: none"> <li>count objects in a set;</li> <li>identify objects by one attribute (color, size, shape);</li> <li>classify two- and three-dimensional concrete objects according to one attribute;</li> <li>recognize positional concepts (on/off);</li> <li>identify measurement tools, including graphs.</li> </ul>	<p>Students performing at level 2 should be able to</p> <ul style="list-style-type: none"> <li>add and subtract using concrete objects;</li> <li>sort objects by one attribute (color, size, shape);</li> <li>recognize and demonstrate understanding of positional concepts (on/off, below/above);</li> <li>use nonstandard units to measure;</li> <li>match the correct tool to a specific task (i.e. measure length, weight, time);</li> <li>identify parts of a chart, graph, or table.</li> </ul>	<p>Students performing at level 2 should be able to</p> <ul style="list-style-type: none"> <li>solve addition and subtraction problems;</li> <li>Identify operations (+ or -);</li> <li>tell which has more in a set;</li> <li>identify a repeating relationship (pattern);</li> <li>sort and classify objects by one attribute, (length, height, weight, volume);</li> <li>use a graph or chart to gain information.</li> </ul>

Performance Level	Mathematics Achievement Level Definitions	Grades 3–5	Grades 6–8	Grade 10
3	Students performing at level 3 demonstrate increasing academic skills and competencies in mathematics.	<p>Students performing at level 3 should be able to</p> <ul style="list-style-type: none"> <li>• demonstrate addition and subtraction concretely or symbolically;</li> <li>• count and compare objects in a set;</li> <li>• sort and classify objects by attribute (shape, size);</li> <li>• identify three-dimensional shapes (cube, sphere, cylinder);</li> <li>• use nonstandard units to measure;</li> <li>• find answers to questions in a graph.</li> </ul>	<p>Students performing at level 3 should be able to</p> <ul style="list-style-type: none"> <li>• identify the answer to one-digit addition and subtraction problems;</li> <li>• identify a set as having more, fewer, or the same number as another set;</li> <li>• extend a repeating pattern;</li> <li>• compare objects by attribute;</li> <li>• interpret information displayed in a table.</li> </ul>	<p>Students performing at level 3 should be able to</p> <ul style="list-style-type: none"> <li>• identify the process for solving an addition or a subtraction problem;</li> <li>• identify and use operational symbols correctly;</li> <li>• estimate the number of objects in a set;</li> <li>• add to find value of a set of coins;</li> <li>• describe, create, and complete a repeating pattern;</li> <li>• use and organize data to create charts, graphs, and tables.</li> </ul>
4	Students performing at level 4 demonstrate and apply academic skills and competencies in mathematics.	<p>Students performing at level 4 should be able to</p> <ul style="list-style-type: none"> <li>• demonstrate understanding of addition and subtraction;</li> <li>• generate a pattern using three-dimensional shapes (cube, sphere, cylinder);</li> <li>• compare objects by attribute (length, size);</li> <li>• interpret information displayed in a graph.</li> </ul>	<p>Students performing at level 4 should be able to</p> <ul style="list-style-type: none"> <li>• solve addition and subtraction facts without regrouping;</li> <li>• describe and extend a repeating pattern;</li> <li>• interpret information displayed in a graph;</li> <li>• use data to create tables.</li> </ul>	<p>Students performing at level 4 should be able to</p> <ul style="list-style-type: none"> <li>• identify, compare, and construct numbers;</li> <li>• use operation symbols (more than less than and equal to) to solve problems;</li> <li>• add to find the value of a set of two or more coins;</li> <li>• identify, describe, create, extend, and complete a repeating pattern;</li> <li>• describe events as more likely or less likely to occur;</li> <li>• use and organize data to create and interpret graphs.</li> </ul>

## Exhibit C-3: Science Descriptions of Achievement Levels

Performance Level	Science Achievement Level Definitions	Grades 3–5	Grades 6–8
1	Students performing at level 1 demonstrate emerging academic skills and competencies in science.	<p>Students performing at level 1 should be able to use their senses to</p> <ul style="list-style-type: none"> <li>observe the outcome of a simple science investigation;</li> <li>sequence growth patterns;</li> <li>observe and record daily weather conditions;</li> <li>recognize the sun and moon and relate them to day and night;</li> <li>recognize that objects move when force is applied..</li> </ul>	<p>Students performing at level 1 should be able to use their senses to</p> <ul style="list-style-type: none"> <li>chose a question (how) (what if) to conduct a scientific investigation;</li> <li>identify major body parts of animals;</li> <li>identify the sun and moon;</li> <li>recognize that objects move when force is applied and recognize speed (fast and slow);</li> <li>sort by one attribute.</li> </ul>
2	Students performing at level 2 demonstrate foundational academic skills and competencies in science.	<p>Students performing at level 2 should be able to</p> <ul style="list-style-type: none"> <li>generate a question to conduct a simple scientific investigation;</li> <li>sort organisms by physical characteristics;</li> <li>identify daily weather conditions;</li> <li>recognize the pattern of day and night;</li> <li>identify the position of objects such as above/below, inside, or on top;</li> <li>sort materials by observable properties.</li> </ul>	<p>Students performing at level 2 should be able to</p> <ul style="list-style-type: none"> <li>carry out a simple scientific investigation to answer a question;</li> <li>sort and describe materials by observable properties;</li> <li>sort and identify organisms by physical characteristics;</li> <li>identify patterns of day and night;</li> <li>recognize that an object at rest moves when force is applied.</li> </ul>
3	Students performing at level 3 demonstrate increasing academic skills and competencies in science.	<p>Students performing at level 3 should be able to</p> <ul style="list-style-type: none"> <li>select appropriate tool for gathering data;</li> <li>carry out a simple scientific investigation;</li> <li>classify events in sequential order;</li> <li>distinguish between living and nonliving things;</li> <li>identify major organs of animals;</li> <li>use a graph to compare daily changes in weather conditions.</li> </ul>	<p>Students performing at level 3 should be able to</p> <ul style="list-style-type: none"> <li>conduct and analyze the results of a simple scientific investigation;</li> <li>use graphs, tables, and charts to record data and report on the results of an investigation;</li> <li>compare the characteristics of living and nonliving things;</li> <li>identify what plants need to grow;</li> <li>use a graph or chart to compare weather conditions for each season;</li> <li>classify organisms into major groups.</li> </ul>
4	Students performing at level 4 demonstrate and apply academic skills and competencies in science.	<p>Students performing at level 4 should be able to</p> <ul style="list-style-type: none"> <li>gain meaning from graphs and tables;</li> <li>conduct and analyze the results of a scientific investigation;</li> <li>identify major organs of animals and their functions;</li> <li>identify living and nonliving things in terms of a food web;</li> <li>identify natural resources as renewable or nonrenewable;</li> <li>identify how heat and light change from season to season.</li> </ul>	<p>Students performing at level 4 should be able to</p> <ul style="list-style-type: none"> <li>plan, conduct, and carry out a simple scientific investigation;</li> <li>communicate simple conclusions using tables and graphs;</li> <li>identify simple machines (incline plane, lever, pulley);</li> <li>compare data on temperature changes over time using a graph;</li> <li>use a graph to show how heat and light change from season to season;</li> <li>identify sources of light.</li> </ul>

**Exhibit C-4: High School Biology Descriptions of Achievement Levels**

Performance Level	Biology Achievement Level Definitions	Grade 10
1	Students demonstrate some emerging academic skills and competencies in biology.	<p>Students performing at level 1 should be able to</p> <ul style="list-style-type: none"> <li>• Identify a possible outcome of a simple scientific investigation;</li> <li>• Recognize tools that could be used in a simple scientific investigation;</li> <li>• Identify a result of a simple investigation based on observations;</li> <li>• Identify appropriate safety instruments when conducting scientific investigations;</li> <li>• Identify things as cellular (living);</li> <li>• Recognize cellular vs. non cellular (living or nonliving) things;</li> <li>• Recognize that cells are the smallest unit of life;</li> <li>• Identify food as a source of protein, carbohydrates, or fat;</li> <li>• Identify food as a source of energy;</li> <li>• Identify what the human body needs for survival;</li> <li>• Identify the offspring produced by parents;</li> <li>• Identify a physical trait;</li> <li>• Identify adaptations that allow animals to survive in their habitat;</li> <li>• Identify a fossil from a non-fossil;</li> <li>• Identify parent/offspring pairs;</li> <li>• Identify natural things in the environment and things made by humans;</li> <li>• Identify natural resources;</li> <li>• Identify the organism being consumed in a food chain.</li> </ul>

Performance Level	Biology Achievement Level Definitions	Grade 10
2	Students performing at level 2 demonstrate foundational academic skills biology.	<p>Students performing at level 2 should be able to</p> <ul style="list-style-type: none"> <li>• Identify a prediction;</li> <li>• Identify the outcome of a simple controlled scientific investigation;</li> <li>• Identify scientific instruments used to make observations;</li> <li>• Interpret simple scientific data;</li> <li>• Identify parts of a graph;</li> <li>• Identify appropriate safety procedures when conducting scientific investigations;</li> <li>• Recall that cells are the basic unit of life;</li> <li>• Classify things as cellular or non cellular;</li> <li>• Recognize that cells can be further broken down into smaller units;</li> <li>• Recognize that cells form tissues;</li> <li>• Recognize food as protein, carbohydrate or fat;</li> <li>• Identify the flow of energy in a simple food web;</li> <li>• Identify what plants need for survival;</li> <li>• Identify the source of energy in a food chain;</li> <li>• Identify parents as a source of physical traits;</li> <li>• Identify DNA/genes as a source of traits;</li> <li>• Identify a trait passed from parent to offspring;</li> <li>• Identify favorable and unfavorable traits that determine species survival;</li> <li>• Classify an animal as living or extinct;</li> <li>• Identify a phylogenetic tree as a diagram that shows ancestry of organisms;</li> <li>• Identify living and nonliving resources in an ecosystem;</li> <li>• Recognize the relationships among organisms;</li> <li>• Identify environmental changes that can effect a population;</li> <li>• Identify human activities that affect Earth.</li> </ul>

Performance Level	Biology Achievement Level Definitions	Grade 10
3	Students performing at level 3 demonstrate increasing academic skills and competencies in biology.	<p>Students performing at level 3 should be able to</p> <ul style="list-style-type: none"> <li>• Identify the hypothesis of a simple investigation;</li> <li>• Recognize which scientific instruments are used to collect and/or record data;</li> <li>• Organize data in a given graph/table/model;</li> <li>• Interpret the results of a scientific data that is displayed in a graph;</li> <li>• Identify the outcome of a simple investigation as the same/different from the original hypothesis;</li> <li>• Identify appropriate safety procedures required when conducting a specific scientific investigation;</li> <li>• Illustrate that all living things are composed of cells;</li> <li>• Identify different types of cells, tissues, and organs;</li> <li>• Illustrate the end product of cell division;</li> <li>• Classify different foods as protein, fat, or carbohydrate;</li> <li>• Summarize the role of protein, carbohydrates, or fat on the body;</li> <li>• Illustrate the flow of energy in a simple food web;</li> <li>• Identify that chromosomes contain DNA;</li> <li>• Identify types of traits passed on from parent to offspring;</li> <li>• Identify offspring based on dominant parent traits;</li> <li>• Identify the structure of DNA;</li> <li>• Identify an organism that is better adapted to a changing habitat;</li> <li>• Identify which organisms are most closely related by using a phylogenetic tree;</li> <li>• Identify predator/prey relationships;</li> <li>• Explain how environmental changes can affect a population;</li> <li>• Identify the sequence of ecological succession;</li> <li>• Classify human activities based on their effect on Earth (beneficial or harmful).</li> </ul>
4	Students performing at level 4 demonstrate and apply academic skills and competencies in biology.	<p>Students performing at level 4 should be able to</p> <ul style="list-style-type: none"> <li>• Analyze the outcome of a simple investigation and compare it to the hypothesis;</li> <li>• Select the appropriate graph for displaying simple scientific data;</li> <li>• Use laboratory instruments and procedures in a safe manner;</li> <li>• Recall that all cells come from other cells;</li> <li>• Identify a nucleus, cell membrane/wall, vacuole, and chloroplast;</li> <li>• Recall different types of cells;</li> <li>• Illustrate that plants and animals have different cell structures;</li> <li>• Identify different types of cells, tissues, organs, and organ systems;</li> <li>• Classify protein, carbohydrate, or fats based on function or description of structure;</li> <li>• Create a food web showing the flow of energy;</li> <li>• Summarize that plants use photosynthesis to make their own food;</li> <li>• Identify that DNA and genes pass on specific traits to offspring;</li> <li>• Predict physical traits of offspring based on dominant or recessive physical traits of parents;</li> <li>• Identify a dominant trait of a given species;</li> <li>• Identify the principal of natural selection;</li> <li>• Explain the effect of a changing habitat on a population;</li> <li>• Explain the relationship of two organisms based on a phylogenetic tree;</li> <li>• Identify living counterparts of extinct organisms;</li> <li>• Classify interrelationships among organisms within ecosystems;</li> <li>• Predict the effect of environmental changes on a population;</li> <li>• Illustrate the changes that occur during succession;</li> </ul>

<b>Performance Level</b>	<b>Biology Achievement Level Definitions</b>	<b>Grade 10</b>
		<ul style="list-style-type: none"><li>• Illustrate how human activities affect the naturally occurring processes on Earth.</li></ul>

## Exhibit C-5: Social Studies Descriptions of Achievement Levels

Performance Level	Social Studies Achievement Level Definitions	Grades 3–5	Grades 6–8
1	Students performing at level 1 demonstrate emerging academic skills and competencies in social studies.	<p>Students performing at level 1 should be able to</p> <ul style="list-style-type: none"> <li>• identify self from others;</li> <li>• respond to a person in authority in the home or school;</li> <li>• follow class rules;</li> <li>• engage in turn-taking;</li> <li>• listen to information about South Carolina history.</li> </ul>	<p>Students performing at level 1 should be able to</p> <ul style="list-style-type: none"> <li>• identify self from others;</li> <li>• respond to familiar authority figures;</li> <li>• follow class rules;</li> <li>• engage in turn-taking and sharing;</li> <li>• listen to information presented about significant and historical events in South Carolina.</li> </ul>
2	Students performing at level 2 demonstrate foundational skills and competencies in social studies.	<p>Students performing at level 2 should be able to</p> <ul style="list-style-type: none"> <li>• identify characteristics such as gender that help identify self in relation to others;</li> <li>• match workers to different jobs in the community;</li> <li>• recognize people in authority and follow class rules;</li> <li>• match the people we honor on some national holidays (e.g., George Washington, Martin Luther King, Jr.) with the holidays;</li> <li>• distinguish between past and present (match jobs of the past with jobs of the present);</li> <li>• match significant historical figures such as Thomas Edison to their accomplishments.</li> </ul>	<p>Students performing at level 2 should be able to</p> <ul style="list-style-type: none"> <li>• identify surroundings (e.g., classroom, school);</li> <li>• match different people to their jobs in the community;</li> <li>• identify people in authority and follow class rules;</li> <li>• demonstrate understanding of rules;</li> <li>• identify the people we honor on some national holidays (e.g., George Washington, Martin Luther King, Jr.);</li> <li>• identify the purpose of money;</li> <li>• match changes over time to the past and present such as communication.</li> </ul>
3	Students performing at level 3 demonstrate increasing skills and competencies in social studies.	<p>Students performing at level 3 should be able to</p> <ul style="list-style-type: none"> <li>• understand the concept of past and present;</li> <li>• demonstrate respect for people in authority;</li> <li>• identify major symbols of the United States;</li> <li>• identify why we celebrate the national holidays;</li> <li>• recognize that when we work we earn money to buy things;</li> <li>• identify features on a map of South Carolina (river, mountain, ocean);</li> <li>• answer questions about significant events related to the Civil War;</li> <li>• identify historical figures such as Thomas Edison, Alexander Graham Bell, etc. to their accomplishments.</li> </ul>	<p>Students performing at level 3 should be able to</p> <ul style="list-style-type: none"> <li>• identify members of the larger community (e.g., police officers, fire-fighters, doctors);</li> <li>• demonstrate understanding of consequences of not following the rules;</li> <li>• identify examples of good citizenship such as honesty, courage, etc.;</li> <li>• identify symbols of the United States (e.g., the flag, bald eagle);</li> <li>• demonstrate an understanding that we work to earn money and use money to buy things;</li> <li>• identify changes over time such as in travel, farming, etc.;</li> <li>• gain information from maps, charts, and graphs;</li> <li>• answer questions about key historical figures and significant historical events including the civil rights movement.</li> </ul>

<p>4</p>	<p>Students performing at level 4 demonstrate and apply academic skills and competencies in social studies.</p>	<p>Students performing at level 4 should be able to</p> <ul style="list-style-type: none"> <li>• place personal history on a time line;</li> <li>• identify the roles of leaders and officials in local government (e.g., principal, mayor, governor);</li> <li>• identify individuals who embody qualities of good citizenship;</li> <li>• identify examples of respect and fair treatment;</li> <li>• recognize that we exchange money for goods and services;</li> <li>• use a key to locate geographic features on a map of South Carolina;</li> <li>• answer questions about key concepts related to the Civil War;</li> <li>• answer questions about the accomplishments of key historical figures such as Thomas Edison, Alexander Graham Bell, etc.</li> </ul>	<p>Students performing at level 4 should be able to</p> <ul style="list-style-type: none"> <li>• place personal and family history on a time line;</li> <li>• identify roles of leaders and officials in local government (e.g., principal, mayor, governor);</li> <li>• identify examples of the qualities of courage and patriotism;</li> <li>• identify examples of respect and fair treatment and their opposites;</li> <li>• recognize how the amount of money available determines what we can buy;</li> <li>• gain information from maps and charts;</li> <li>• identify the accomplishments of Civil Rights leaders including Rosa Parks.</li> </ul>
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## Appendix D: Statistics Summaries for the 2014 Spring Items

### Exhibit D-1: Grade-Band 3-5 Science Operational, Operational-Field-Test, and Field-Test Classical Item Statistics

ITS Item ID	Grade	Item Position	Role	Adjusted Biserial/ Polyserial	Average Score	Access Limitation	Omit	DIF	
								Female vs. Male	Black vs. White
2728	3-5	1	Operational-Field Test	0.63	0.61	0.00	0.02	+A	-A
2729	3-5	2	Operational-Field Test	0.65	0.57	0.00	0.04	+A	-A
2730	3-5	3	Operational-Field Test	0.27	0.48	0.00	0.08	+A	+A
2731	3-5	4	Operational-Field Test	0.43	0.67	0.00	0.10	+A	+A
2732	3-5	5	Operational-Field Test	0.35	0.46	0.01	0.12	-A	-A
2733	3-5	6	Operational-Field Test	0.39	0.67	0.00	0.12	+A	-A
2280	3-5	7	Operational	0.37	0.55	0.00	0.09	-A	+A
2281	3-5	8	Operational	0.30	0.58	0.00	0.09	-A	-A
2282	3-5	9	Operational	0.30	0.41	0.00	0.10	+A	+A
2283	3-5	10	Operational	0.56	0.70	0.00	0.07	+A	+A
2284	3-5	11	Operational	0.39	0.62	0.00	0.09	-A	+A
2285	3-5	12	Operational	0.54	0.69	0.00	0.11	-A	-A
1663	3-5	13	Operational	0.59	0.68	0.00	0.04	-A	+A
1658	3-5	14	Operational	0.48	0.61	0.00	0.05	-A	-A
1659	3-5	15	Operational	0.45	0.61	0.00	0.06	-A	+A
1660	3-5	16	Operational	0.56	0.66	0.00	0.05	+A	+A
1661	3-5	17	Operational	0.42	0.51	0.00	0.07	+B	-A
1662	3-5	18	Operational	0.38	0.61	0.00	0.06	+A	-A
1399	3-5	19	Operational	0.10	0.62	0.01	0.06	-A	-A
1400	3-5	20	Operational	0.42	0.51	0.00	0.05	-A	+A
1401	3-5	21	Operational	0.43	0.58	0.00	0.07	+A	-A
1402	3-5	22	Operational	0.22	0.57	0.00	0.08	+A	+A
1403	3-5	23	Operational	0.41	0.67	0.01	0.05	+A	-A
1404	3-5	24	Operational	0.37	0.54	0.01	0.06	-A	-A
1405	3-5	25	Operational	0.32	0.68	0.01	0.06	+A	-A
2806	3-5	26	Field Test	0.48	0.67	0.00	0.05	+A	+A
2807	3-5	27	Field Test	0.39	0.67	0.00	0.07	+B	+A
2808	3-5	28	Field Test	0.38	0.45	0.00	0.07	+A	-A
2810	3-5	29	Field Test	0.33	0.61	0.00	0.06	-A	-A
2811	3-5	30	Field Test	0.42	0.57	0.00	0.08	-A	-A

ITS Item ID	Grade	Item Position	Role	Adjusted Biserial/ Polyserial	Average Score	Access Limitation	Omit	DIF	
								Female vs. Male	Black vs. White
2812	3-5	31	Field Test	0.37	0.72	0.00	0.08	+A	+A
745	3-5; 6-8;	32	Operational	0.52	0.70	0.00	0.05	+A	-A
748	3-5; 6-8;	33	Operational	0.34	0.48	0.01	0.06	+A	+A
751	3-5; 6-8;	34	Operational	0.36	0.60	0.01	0.07	-A	+A
749	3-5; 6-8;	35	Operational	0.57	0.44	0.01	0.07	+A	+A
2298	3-5	36	Operational	0.39	0.67	0.00	0.03	-A	-A
2299	3-5	37	Operational	0.43	0.73	0.00	0.03	-A	-A
2300	3-5	38	Operational	0.41	0.57	0.00	0.03	-A	-A
2301	3-5	39	Operational	0.38	0.66	0.00	0.04	+A	-A
2302	3-5	40	Operational	0.60	0.55	0.00	0.05	-A	+A
2303	3-5	41	Operational	0.48	0.73	0.00	0.05	-A	-A
2703	3-5	42	Field Test	0.18	0.59	0.00	0.01	+B	+A
2704	3-5	43	Field Test	0.28	0.60	0.00	0.00	-A	+A
2705	3-5	44	Field Test	0.38	0.55	0.00	0.00	-A	+A
2706	3-5	45	Field Test	0.32	0.57	0.00	0.00	+A	+A
2707	3-5	46	Field Test	-0.07	0.59	0.00	0.00	+A	-A
2708	3-5	47	Field Test	0.18	0.47	0.00	0.00	+A	+A
2709	3-5	48	Field Test	0.18	0.68	0.00	0.00	-A	+A
2753	3-5	49	Operational- Field Test	0.57	0.66	0.00	0.00	+A	+A
2754	3-5	50	Operational- Field Test	0.52	0.80	0.00	0.00	+A	+A
2755	3-5	51	Operational- Field Test	0.65	0.59	0.00	0.00	-A	+A
2757	3-5	52	Operational- Field Test	0.56	0.65	0.00	0.00	+A	-A
2758	3-5	53	Operational- Field Test	0.36	0.70	0.00	0.00	+A	+A
2756	3-5	54	Operational- Field Test	0.58	0.48	0.00	0.01	-A	-A
2722	3-5	55	Operational- Field Test	0.18	0.55	0.00	0.00	+B	+A
2726	3-5	56	Operational- Field Test	0.58	0.67	0.00	0.00	+A	-A
2724	3-5	57	Operational- Field Test	0.27	0.75	0.00	0.00	+A	-A
2725	3-5	58	Operational- Field Test	0.22	0.42	0.00	0.00	+A	+A
2727	3-5	59	Operational- Field Test	0.31	0.71	0.00	0.00	-A	+A
2723	3-5	60	Operational- Field Test	0.44	0.43	0.00	0.00	+A	-A
940	3-5	61	Operational	0.63	0.67	0.00	0.00	-A	+A

ITS Item ID	Grade	Item Position	Role	Adjusted Biserial/ Polyserial	Average Score	Access Limitation	Omit	DIF	
								Female vs. Male	Black vs. White
941	3-5	62	Operational	0.55	0.67	0.00	0.00	-A	+A
942	3-5	63	Operational	0.68	0.67	0.00	0.00	+A	+A
977	3-5	64	Operational	0.39	0.73	0.00	0.00	-A	-A
943	3-5	65	Operational	0.55	0.69	0.00	0.01	-A	-A
2672	3-5	66	Field Test	0.29	0.45	0.00	0.00	+A	+A
2673	3-5	67	Field Test	-0.05	0.63	0.00	0.00	+A	+A
2674	3-5	68	Field Test	0.28	0.52	0.00	0.00	+A	+A
2675	3-5	69	Field Test	0.22	0.65	0.00	0.00	+A	+A
2676	3-5	70	Field Test	0.12	0.63	0.00	0.01	+A	+A
2677	3-5	71	Field Test	0.41	0.66	0.00	0.00	-A	+A
803	3-5	72	Operational	0.37	0.50	0.00	0.00	+A	+A
804	3-5	73	Operational	0.27	0.82	0.00	0.00	+A	-A
806	3-5	74	Operational	0.24	0.68	0.00	0.00	-A	-A
807	3-5	75	Operational	0.01	0.47	0.00	0.00	+A	+A
2691	3-5	76	Operational- Field Test	0.53	0.63	0.00	0.00	-A	+A
2692	3-5	77	Operational- Field Test	0.45	0.67	0.00	0.00	-A	-A
2693	3-5	78	Operational- Field Test	0.59	0.77	0.00	0.00	-A	+A
2694	3-5	79	Operational- Field Test	0.48	0.68	0.00	0.00	-A	-A
2695	3-5	80	Operational- Field Test	0.12	0.52	0.00	0.00	+A	-A
2696	3-5	81	Operational- Field Test	0.30	0.50	0.00	0.00	-A	-A
1670	3-5	82	Operational	0.42	0.77	0.00	0.00	+A	+A
1673	3-5	83	Operational	0.54	0.72	0.00	0.00	+A	-A
1675	3-5	84	Operational	0.28	0.76	0.00	0.00	+A	-A
1672	3-5	85	Operational	0.51	0.52	0.00	0.00	-A	+A

**Exhibit D-2: Grade-Band 6-8 Science Operational, Operational-Field-Test, and Field-Test  
Classical Item Statistics**

ITS Item ID	Grade	Item Position	Role	Adjusted Biserial/ Polyserial	Average Score	Access Limitation	Omit	DIF	
								Female vs. Male	Black vs. White
787	6-8; HS;	1	Operational	0.76	0.78	0.00	0.03	-A	-A
789	6-8; HS;	2	Operational	0.15	0.56	0.00	0.08	+A	-A
790	6-8; HS;	3	Operational	0.55	0.62	0.00	0.12	+A	-A
791	6-8; HS;	4	Operational	0.26	0.41	0.00	0.11	+C	-A
793	6-8; HS;	5	Operational	0.29	0.62	0.00	0.12	-A	+A
794	6-8; HS;	6	Operational	0.49	0.56	0.00	0.12	+A	+A
2317	6-8	7	Operational -Field Test	0.70	0.65	0.00	0.06	-A	-A
2323	6-8	8	Operational -Field Test	0.53	0.51	0.00	0.12	+A	+A
2324	6-8	9	Operational -Field Test	0.40	0.62	0.00	0.12	-C	+A
2325	6-8	10	Operational -Field Test	0.37	0.58	0.00	0.18	+A	+A
2326	6-8	11	Operational -Field Test	0.45	0.54	0.00	0.14	+A	-A
2327	6-8	12	Operational -Field Test	0.32	0.49	0.00	0.13	+A	+A
1985	6-8	13	Operational	0.61	0.74	0.00	0.02	-A	-A
1986	6-8	14	Operational	0.49	0.57	0.00	0.06	+A	-A
1987	6-8	15	Operational	0.27	0.69	0.00	0.06	-C	-A
1988	6-8	16	Operational	0.36	0.60	0.00	0.06	+A	+A
1989	6-8	17	Operational	0.41	0.68	0.00	0.05	-A	+A
1990	6-8	18	Operational	0.27	0.66	0.00	0.06	+A	+A
1991	6-8	19	Operational	0.32	0.70	0.00	0.07	-B	+A
1992	6-8	20	Operational	0.36	0.41	0.00	0.05	+B	-A
2334	6-8	21	Operational	0.00	0.54	0.00	0.07	+A	+A
2335	6-8	22	Operational	0.24	0.63	0.00	0.08	-A	-A
2336	6-8	23	Operational	0.29	0.65	0.00	0.09	-A	+A
2337	6-8	24	Operational	0.14	0.58	0.00	0.08	+A	+A
2338	6-8	25	Operational	0.27	0.66	0.00	0.08	+A	+A
2339	6-8	26	Operational	0.28	0.63	0.00	0.08	-A	+A
2685	6-8	27	Field Test	0.44	0.69	0.00	0.07	+A	-A
2686	6-8	28	Field Test	0.24	0.56	0.00	0.08	-A	-A
2687	6-8	29	Field Test	0.13	0.35	0.00	0.09	+A	-A
2689	6-8	30	Field Test	0.17	0.50	0.00	0.07	+A	-A
2688	6-8	31	Field Test	0.12	0.51	0.00	0.08	+A	-A
2690	6-8	32	Field Test	0.37	0.59	0.00	0.08	-A	-A

ITS Item ID	Grade	Item Position	Role	Adjusted Biserial/ Polyserial	Average Score	Access Limitation	Omit	DIF	
								Female vs. Male	Black vs. White
2748	6-8	33	Operational -Field Test	0.37	0.45	0.00	0.10	-A	+A
2747	6-8	34	Operational -Field Test	0.39	0.66	0.00	0.10	-A	+A
2749	6-8	35	Operational -Field Test	0.43	0.55	0.00	0.11	-A	+A
2750	6-8	36	Operational -Field Test	0.40	0.59	0.00	0.11	-A	+A
2751	6-8	37	Operational -Field Test	0.18	0.36	0.00	0.11	+A	-A
2752	6-8	38	Operational -Field Test	0.40	0.68	0.00	0.12	+A	-A
1417	6-8	39	Operational	0.58	0.68	0.00	0.03	-A	-A
1423	6-8	40	Operational	0.51	0.78	0.00	0.04	-A	+B
1418	6-8	41	Operational	0.51	0.79	0.00	0.03	+A	+A
1420	6-8	42	Operational	0.60	0.71	0.00	0.03	+A	-A
1421	6-8	43	Operational	0.54	0.63	0.00	0.03	+A	-A
1422	6-8	44	Operational	0.50	0.74	0.00	0.03	-A	-A
2734	6-8	45	Field Test	0.57	0.84	0.00	0.00	+A	+A
2736	6-8	46	Field Test	0.45	0.81	0.00	0.00	+A	+A
2735	6-8	47	Field Test	0.40	0.81	0.00	0.01	+A	+A
2738	6-8	48	Field Test	0.55	0.68	0.00	0.00	+A	+A
2739	6-8	49	Field Test	0.40	0.69	0.00	0.00	+A	-A
2740	6-8	50	Field Test	0.43	0.85	0.00	0.00	+A	-A
1009	3-5; 6-8; HS;	51	Operational	0.45	0.85	0.00	0.00	-A	-A
1011	3-5; 6-8; HS;	52	Operational	0.57	0.63	0.00	0.00	-A	+A
1010	3-5; 6-8;	53	Operational	0.48	0.84	0.00	0.00	+A	+A
1013	3-5; 6-8; HS;	54	Operational	0.57	0.83	0.00	0.00	-A	+A
2329	6-8	55	Operational	0.29	0.69	0.00	0.00	+A	+A
2523	6-8	56	Operational	0.63	0.74	0.00	0.00	+A	-A
2330	6-8	57	Operational	0.39	0.78	0.00	0.00	+A	-A
2331	6-8	58	Operational	0.62	0.72	0.00	0.00	+A	+A
2332	6-8	59	Operational	0.34	0.76	0.00	0.00	-A	-A
2333	6-8	60	Operational	0.65	0.81	0.00	0.00	+A	+A
1676	6-8	61	Operational	0.61	0.86	0.00	0.00	+A	-A
1677	6-8	62	Operational	0.45	0.78	0.00	0.00	-A	+A
1678	6-8	63	Operational	0.71	0.73	0.00	0.00	+A	+A
1679	6-8	64	Operational	0.54	0.66	0.00	0.00	-A	-A

ITS Item ID	Grade	Item Position	Role	Adjusted Biserial/ Polyserial	Average Score	Access Limitation	Omit	DIF	
								Female vs. Male	Black vs. White
1680	6-8	65	Operational	0.30	0.54	0.00	0.00	-A	-A
1681	6-8	66	Operational	0.65	0.61	0.00	0.00	-A	+A
2776	6-8	67	Field Test	0.47	0.62	0.00	0.00	+A	+A
2777	6-8	68	Field Test	0.09	0.61	0.00	0.00	-A	+A
2778	6-8	69	Field Test	0.14	0.55	0.00	0.00	-A	+A
2779	6-8	70	Field Test	0.14	0.65	0.00	0.00	-A	+A
2780	6-8	71	Field Test	0.11	0.49	0.00	0.01	-B	-A
2781	6-8	72	Field Test	0.02	0.48	0.00	0.01	-A	-A
2847	6-8	73	Operational -Field Test	0.59	0.78	0.00	0.00	-A	+A
2848	6-8	74	Operational -Field Test	0.34	0.74	0.00	0.00	+A	+A
2849	6-8	75	Operational -Field Test	0.36	0.60	0.00	0.00	-A	-A
2850	6-8	76	Operational -Field Test	0.53	0.58	0.00	0.00	+A	-A
2851	6-8	77	Operational -Field Test	0.47	0.73	0.00	0.00	+A	-A
2852	6-8	78	Operational -Field Test	0.58	0.55	0.00	0.00	-A	+A
2304	6-8	79	Operational	0.37	0.47	0.00	0.00	+A	-A
2305	6-8	80	Operational	0.38	0.58	0.00	0.00	+A	+A
2306	6-8	81	Operational	0.35	0.73	0.00	0.00	-A	-A
2308	6-8	82	Operational	0.64	0.63	0.00	0.00	+A	-A
2309	6-8	83	Operational	0.17	0.69	0.00	0.00	+A	+A
2310	6-8	84	Operational	0.32	0.39	0.00	0.00	+A	+B
2716	6-8	85	Operational -Field Test	0.35	0.51	0.00	0.00	-A	-A
2718	6-8	86	Operational -Field Test	0.34	0.64	0.00	0.00	-A	+A
2719	6-8	87	Operational -Field Test	0.16	0.72	0.00	0.00	+A	-A
2721	6-8	88	Operational -Field Test	0.39	0.75	0.00	0.00	+A	+A
2720	6-8	89	Operational -Field Test	0.29	0.50	0.00	0.00	-A	+A
2717	6-8	90	Operational -Field Test	0.11	0.39	0.00	0.00	+A	-A

**Exhibit D-3: Grade 10 Biology Operational, Operational-Field-Test, and Field-Test Classical Item Statistics**

ITS Item ID	Grade	Item Position	Role	Adjusted Biserial/ Polyserial	Average Score	Access Limitation	Omit	DIF	
								Female vs. Male	Black vs. White
2524	HS	1	Operational	0.75	0.77	0.00	0.02	-A	+A
2341	HS	2	Operational	0.53	0.66	0.00	0.04	+A	-A
2342	HS	3	Operational	0.46	0.68	0.00	0.07	-A	-A
2343	HS	4	Operational	0.23	0.55	0.02	0.05	+A	+A
2344	HS	5	Operational	0.51	0.76	0.00	0.06	-A	+A
2345	HS	6	Operational	0.55	0.59	0.02	0.06	+A	-A
2346	HS	7	Operational	0.75	0.73	0.00	0.03	-A	-A
2347	HS	8	Operational	0.52	0.75	0.00	0.06	-A	+A
2349	HS	9	Operational	0.39	0.45	0.00	0.05	+A	+A
2350	HS	10	Operational	0.43	0.48	0.00	0.05	-A	+A
2351	HS	11	Operational	0.33	0.72	0.00	0.05	-A	+A
2827	HS	12	Operational-Field Test	0.71	0.82	0.00	0.01	-A	+A
2828	HS	13	Operational-Field Test	0.66	0.78	0.00	0.02	-A	-A
2829	HS	14	Operational-Field Test	0.63	0.83	0.00	0.04	-A	+A
2830	HS	15	Operational-Field Test	0.65	0.76	0.00	0.07	+A	-A
2832	HS	16	Operational-Field Test	0.68	0.67	0.00	0.04	+A	+A
2833	HS	17	Operational-Field Test	0.02	0.63	0.00	0.05	+A	-A
2027	HS	18	Operational	0.66	0.72	0.00	0.04	+A	-A
2028	HS	19	Operational	0.59	0.83	0.00	0.04	+A	+A
2029	HS	20	Operational	0.54	0.51	0.00	0.05	+A	-A
2030	HS	21	Operational	0.42	0.52	0.00	0.05	+A	-A
2031	HS	22	Operational	0.46	0.76	0.00	0.04	+A	+A
2032	HS	23	Operational	0.55	0.61	0.00	0.05	-A	-A
2033	HS	24	Operational	0.50	0.55	0.00	0.05	+A	+A
2034	HS	25	Operational	0.41	0.60	0.00	0.04	+A	-A
2772	HS	26	Field Test	0.54	0.61	0.00	0.09	-A	-A
2813	HS	27	Field Test	0.33	0.66	0.00	0.09	-A	-A
2773	HS	28	Field Test	0.37	0.47	0.00	0.08	+A	-A
2774	HS	29	Field Test	0.48	0.80	0.00	0.08	-C	-A
2814	HS	30	Field Test	0.51	0.50	0.00	0.07	+A	-A
2775	HS	31	Field Test	0.11	0.68	0.00	0.07	-A	-A
2815	HS	32	Operational-	0.64	0.56	0.00	0.05	+A	-A

ITS Item ID	Grade	Item Position	Role	Adjusted Biserial/ Polyserial	Average Score	Access Limitation	Omit	DIF	
								Female vs. Male	Black vs. White
			Field Test						
2816	HS	33	Operational-Field Test	0.37	0.55	0.00	0.05	-A	+A
2818	HS	34	Operational-Field Test	0.45	0.58	0.00	0.05	+A	-A
2819	HS	35	Operational-Field Test	0.35	0.56	0.00	0.06	+A	+A
2820	HS	36	Operational-Field Test	0.52	0.46	0.00	0.05	+A	-A
2821	HS	37	Operational-Field Test	0.12	0.47	0.00	0.05	-A	-A
1521	HS	38	Operational	0.58	0.80	0.01	0.04	-A	-A
1523	HS	39	Operational	0.59	0.60	0.00	0.04	-A	+A
1526	HS	40	Operational	0.47	0.74	0.00	0.05	-A	+A
1525	HS	41	Operational	0.68	0.58	0.00	0.04	+A	-A
1524	HS	42	Operational	0.56	0.44	0.00	0.04	+A	+A
2794	HS	43	Field Test	0.38	0.69	0.00	0.01	-A	-C
2795	HS	44	Field Test	0.30	0.54	0.00	0.01	-A	+A
2796	HS	45	Field Test	0.47	0.68	0.00	0.00	-A	-A
2797	HS	46	Field Test	0.51	0.70	0.00	0.00	-C	-A
2798	HS	47	Field Test	0.39	0.78	0.00	0.00	-C	-A
2799	HS	48	Field Test	0.30	0.58	0.00	0.00	-A	-A
1504	HS	49	Operational	0.43	0.71	0.00	0.00	+A	+A
1503	HS	50	Operational	0.51	0.73	0.00	0.00	-A	+A
1497	HS	51	Operational	0.49	0.77	0.00	0.00	+A	+A
1499	HS	52	Operational	0.37	0.77	0.00	0.00	-A	-A
1501	HS	53	Operational	0.19	0.63	0.00	0.00	-A	-A
2697	HS	54	Operational-Field Test	0.24	0.62	0.00	0.00	+A	-A
2699	HS	55	Operational-Field Test	0.35	0.57	0.00	0.00	-A	+A
2953	HS	56	Operational-Field Test	0.49	0.60	0.00	0.00	+A	+A
2700	HS	57	Operational-Field Test	0.52	0.80	0.00	0.00	-A	-A
2701	HS	58	Operational-Field Test	0.56	0.73	0.00	0.00	-A	+A
2702	HS	59	Operational-Field Test	0.47	0.63	0.00	0.00	+A	-A
2954	HS	60	Operational-Field Test	0.45	0.61	0.00	0.00	+C	-A
2854	HS	61	Operational-Field Test	0.35	0.56	0.00	0.00	-A	+A

ITS Item ID	Grade	Item Position	Role	Adjusted Biserial/Polyserial	Average Score	Access Limitation	Omit	DIF	
								Female vs. Male	Black vs. White
2855	HS	62	Operational-Field Test	0.45	0.69	0.00	0.00	+A	-A
2856	HS	63	Operational-Field Test	0.25	0.58	0.00	0.00	+A	-A
2857	HS	64	Operational-Field Test	0.19	0.71	0.00	0.00	-A	-A
2858	HS	65	Operational-Field Test	0.40	0.64	0.00	0.00	+A	-A
2859	HS	66	Operational-Field Test	0.59	0.61	0.00	0.00	-A	-A
2666	HS	67	Field Test	0.55	0.84	0.00	0.00	+A	+A
2667	HS	68	Field Test	0.38	0.80	0.00	0.00	+A	+A
2668	HS	69	Field Test	0.28	0.81	0.00	0.00	+A	-A
2669	HS	70	Field Test	0.36	0.73	0.00	0.00	+A	-A
2671	HS	71	Field Test	0.37	0.67	0.00	0.00	+A	-C
1515	HS	72	Operational	0.51	0.74	0.00	0.00	+A	-A
1516	HS	73	Operational	0.01	0.80	0.00	0.00	-A	-C
1517	HS	74	Operational	0.48	0.65	0.00	0.00	-C	+A
1518	HS	75	Operational	0.14	0.81	0.00	0.00	-A	-A
1519	HS	76	Operational	0.38	0.63	0.00	0.00	-A	+A
1520	HS	77	Operational	0.53	0.67	0.00	0.00	-A	-A
2359	HS	78	Operational	0.33	0.71	0.00	0.00	-A	+A
2360	HS	79	Operational	0.57	0.77	0.00	0.00	-A	+A
2361	HS	80	Operational	0.55	0.73	0.00	0.00	-A	+A
2362	HS	81	Operational	0.50	0.67	0.00	0.00	+C	-A
2363	HS	82	Operational	0.19	0.70	0.00	0.00	-A	-A
2364	HS	83	Operational	0.46	0.58	0.00	0.00	-A	+A
2013	HS	84	Operational	0.49	0.80	0.00	0.00	+A	+A
2014	HS	85	Operational	0.52	0.67	0.00	0.00	+A	-A
2015	HS	86	Operational	0.48	0.69	0.00	0.01	+A	-A
2017	HS	87	Operational	0.57	0.76	0.00	0.00	+A	+A
2016	HS	88	Operational	0.44	0.85	0.00	0.00	+A	-A
2025	HS	89	Operational	0.35	0.70	0.00	0.00	+A	+A
2026	HS	90	Operational	0.52	0.70	0.00	0.00	+A	+A

**Exhibit D-4: Grade 3-5 Social Studies Operational, Operational-Field-Test, and Field-Test  
Classical Item Statistics**

ITS Item ID	Grade	Item Position	Role	Adjusted Biserial/ Polyserial	Average Score	Access Limitation	Omit	DIF	
								Female vs. Male	Black vs. White
1131	3-5	1	Operational	0.53	0.60	0.00	0.02	+A	+A
1133	3-5	2	Operational	0.19	0.57	0.00	0.09	-A	+A
1134	3-5	3	Operational	0.24	0.62	0.00	0.09	-A	+A
1135	3-5	4	Operational	0.29	0.62	0.00	0.10	+A	-A
2516	3-5	5	Operational	0.38	0.66	0.00	0.02	+A	-A
2517	3-5	6	Operational	0.28	0.66	0.00	0.07	+A	-A
2518	3-5	7	Operational	0.34	0.41	0.00	0.13	+A	-A
2519	3-5	8	Operational	0.11	0.65	0.00	0.12	-A	-A
2520	3-5	9	Operational	0.22	0.41	0.00	0.11	+A	-A
2521	3-5	10	Operational	0.41	0.59	0.00	0.16	-A	+A
1166	3-5; 6-8;	11	Operational	0.41	0.66	0.00	0.04	+A	-A
1167	3-5; 6-8;	12	Operational	0.46	0.64	0.00	0.06	-A	+A
1168	3-5; 6-8;	13	Operational	0.49	0.56	0.00	0.07	-A	-A
1169	3-5; 6-8;	14	Operational	0.46	0.64	0.00	0.06	+B	-A
1125	3-5	15	Operational	0.52	0.42	0.00	0.05	+A	+A
1126	3-5	16	Operational	0.41	0.69	0.00	0.06	+A	+A
1127	3-5	17	Operational	0.49	0.55	0.00	0.05	+A	-A
1128	3-5	18	Operational	0.56	0.60	0.00	0.06	-A	-A
1129	3-5	19	Operational	0.52	0.62	0.00	0.07	+A	-A
2919	3-5	20	Field Test	0.33	0.63	0.00	0.06	-A	+A
2920	3-5	21	Field Test	0.34	0.42	0.00	0.06	+B	+A
2921	3-5	22	Field Test	0.39	0.66	0.00	0.07	+A	+A
2922	3-5	23	Field Test	0.17	0.50	0.00	0.06	+B	+A
2923	3-5	24	Field Test	0.33	0.65	0.00	0.07	-A	+A
2917	3-5	25	Field Test	0.42	0.43	0.00	0.06	+A	-A
2918	3-5	26	Field Test	0.24	0.41	0.00	0.08	-A	-A
2866	3-5	27	Operational-Field Test	0.43	0.35	0.00	0.08	+A	+A
2867	3-5	28	Operational-Field Test	0.39	0.32	0.00	0.08	+A	+A
2868	3-5	29	Operational-Field Test	0.20	0.58	0.00	0.08	-A	+A
2869	3-5	30	Operational-Field Test	0.48	0.37	0.00	0.08	+A	-A

ITS Item ID	Grade	Item Position	Role	Adjusted Biserial/Polyserial	Average Score	Access Limitation	Omit	DIF	
								Female vs. Male	Black vs. White
2870	3-5	31	Operational-Field Test	0.33	0.57	0.00	0.08	-A	+A
2871	3-5	32	Operational-Field Test	0.40	0.52	0.00	0.08	+A	-A
2872	3-5	33	Operational-Field Test	0.42	0.35	0.00	0.08	-A	+A
1848	3-5	34	Operational	0.66	0.60	0.00	0.03	+A	+A
1849	3-5	35	Operational	0.54	0.68	0.00	0.04	-A	+A
1850	3-5	36	Operational	0.46	0.70	0.00	0.03	-A	+A
1851	3-5	37	Operational	0.58	0.57	0.00	0.03	-A	-A
1852	3-5	38	Operational	0.54	0.72	0.00	0.04	-A	-A
1853	3-5	39	Operational	0.50	0.70	0.00	0.04	-A	+A
1854	3-5	40	Operational	0.63	0.69	0.00	0.04	-A	+A
2924	3-5	41	Field Test	0.57	0.61	0.00	0.01	-A	+A
2925	3-5	42	Field Test	0.37	0.66	0.00	0.01	-A	+A
2926	3-5	43	Field Test	0.66	0.58	0.00	0.00	-A	+A
2927	3-5	44	Field Test	0.51	0.47	0.00	0.01	-A	+A
2928	3-5	45	Field Test	0.16	0.52	0.00	0.00	+A	+A
2929	3-5	46	Field Test	0.40	0.55	0.00	0.01	-A	+A
2902	3-5	47	Operational-Field Test	0.09	0.64	0.00	0.00	-A	-A
2903	3-5	48	Operational-Field Test	0.31	0.70	0.00	0.00	-A	-A
2904	3-5	49	Operational-Field Test	0.40	0.59	0.00	0.00	+B	+A
2905	3-5	50	Operational-Field Test	0.52	0.43	0.00	0.00	+A	+A
2906	3-5	51	Operational-Field Test	0.45	0.71	0.00	0.00	-A	+A
2907	3-5	52	Operational-Field Test	0.47	0.59	0.00	0.00	-A	+A
2908	3-5	53	Operational-Field Test	0.70	0.57	0.00	0.01	-A	-A
2909	3-5	54	Operational-Field Test	0.32	0.57	0.00	0.00	-A	-A
1246	3-5	55	Operational	0.74	0.64	0.00	0.00	-A	+A
1247	3-5	56	Operational	0.54	0.90	0.00	0.00	-A	+A
1248	3-5	57	Operational	0.62	0.84	0.00	0.00	+A	-A
1249	3-5	58	Operational	0.54	0.47	0.00	0.00	-A	+A
1250	3-5	59	Operational	0.40	0.85	0.00	0.00	-A	-A
1251	3-5	60	Operational	0.40	0.68	0.00	0.01	-A	+A
2766	3-5	61	Operational-Field Test	0.60	0.68	0.00	0.00	+A	-A

ITS Item ID	Grade	Item Position	Role	Adjusted Biserial/ Polyserial	Average Score	Access Limitation	Omit	DIF	
								Female vs. Male	Black vs. White
2768	3-5	62	Operational-Field Test	0.55	0.64	0.00	0.00	-A	-A
2767	3-5	63	Operational-Field Test	0.60	0.63	0.00	0.01	-A	+A
2910	3-5	64	Operational-Field Test	0.38	0.61	0.00	0.00	-A	+A
2769	3-5	65	Operational-Field Test	0.45	0.76	0.00	0.00	-A	-A
2770	3-5	66	Operational-Field Test	0.47	0.73	0.00	0.01	-A	-A
2771	3-5	67	Operational-Field Test	0.59	0.52	0.00	0.01	-A	+A
2896	3-5	68	Field Test	0.40	0.63	0.00	0.00	+A	-A
2897	3-5	69	Field Test	0.23	0.55	0.00	0.00	+A	-A
2898	3-5	70	Field Test	0.43	0.46	0.00	0.00	+A	+A
2899	3-5	71	Field Test	0.19	0.69	0.00	0.00	-A	+A
2900	3-5	72	Field Test	0.32	0.58	0.00	0.00	-A	-A
2901	3-5	73	Field Test	0.52	0.46	0.00	0.00	-A	-A
2203	3-5	74	Operational	0.67	0.59	0.00	0.00	+A	+A
2204	3-5	75	Operational	0.52	0.84	0.00	0.00	+A	+A
2205	3-5	76	Operational	0.73	0.67	0.00	0.00	+A	-A
2206	3-5	77	Operational	0.60	0.61	0.00	0.00	+A	+A
2209	3-5	78	Operational	0.49	0.83	0.00	0.00	+A	+A
2940	3-5	79	Operational-Field Test	0.57	0.67	0.00	0.00	+A	+A
2941	3-5	80	Operational-Field Test	0.41	0.67	0.00	0.00	+A	-A
2942	3-5	81	Operational-Field Test	0.58	0.63	0.00	0.00	-A	+A
2943	3-5	82	Operational-Field Test	0.12	0.61	0.00	0.00	-A	-A
2944	3-5	83	Operational-Field Test	0.62	0.54	0.00	0.00	-A	+A
2946	3-5	84	Operational-Field Test	0.56	0.75	0.00	0.00	+A	-A
2402	3-5	85	Operational	0.27	0.82	0.00	0.00	+A	+A
2328	3-5	86	Operational	0.24	0.62	0.00	0.00	+A	+A
2401	3-5	87	Operational	0.29	0.53	0.00	0.00	+A	+A
2403	3-5	88	Operational	0.22	0.65	0.00	0.00	+A	+A
2404	3-5	89	Operational	0.27	0.49	0.00	0.00	+A	+A

**Exhibit D-5: Grade 6-8 Social Studies Operational, Operational-Field-Test, and Field-Test  
Classical Item Statistics**

ITS Item ID	Grade	Item Position	Role	Adjusted Biserial/ Polyserial	Average Score	Access Limitation	Omit	DIF	
								Female vs. Male	Black vs. White
1049	6-8	1	Operational	0.65	0.60	0.00	0.04	+A	+A
1051	6-8	2	Operational	0.23	0.60	0.00	0.11	+A	-A
1050	6-8	3	Operational	0.27	0.55	0.00	0.12	+A	+A
1053	6-8	4	Operational	0.27	0.43	0.00	0.13	-A	-A
2185	6-8	5	Operational	0.67	0.58	0.00	0.05	+A	+A
2186	6-8	6	Operational	0.29	0.66	0.00	0.09	-A	+A
2187	6-8	7	Operational	0.29	0.45	0.00	0.12	-A	+A
2188	6-8	8	Operational	0.53	0.65	0.00	0.13	-A	+A
2189	6-8	9	Operational	0.41	0.55	0.00	0.14	-A	-A
2190	6-8	10	Operational	0.28	0.52	0.00	0.15	+A	+A
2352	6-8	11	Operational	0.62	0.64	0.00	0.02	+A	-A
2355	6-8	12	Operational	0.07	0.52	0.00	0.06	+A	-A
2354	6-8	13	Operational	0.31	0.60	0.00	0.06	-A	-A
2356	6-8	14	Operational	0.26	0.58	0.00	0.07	-C	-A
2357	6-8	15	Operational	0.38	0.50	0.00	0.09	-A	+A
1059	6-8	16	Operational	0.53	0.64	0.00	0.06	-C	+A
1067	6-8	17	Operational	0.43	0.46	0.00	0.08	+A	+A
1068	6-8	18	Operational	0.43	0.56	0.00	0.06	+A	+A
1070	6-8	19	Operational	0.52	0.62	0.00	0.06	+A	+A
2874	6-8	20	FieldTest	0.35	0.62	0.00	0.08	-A	+A
2875	6-8	21	FieldTest	0.33	0.53	0.00	0.06	+A	+A
2877	6-8	22	FieldTest	0.37	0.60	0.00	0.07	-A	-A
2878	6-8	23	FieldTest	0.38	0.56	0.00	0.08	-C	+A
2879	6-8	24	FieldTest	0.26	0.38	0.00	0.09	+A	+A
2880	6-8	25	FieldTest	0.45	0.56	0.00	0.10	-A	-A
2876	6-8	26	FieldTest	0.45	0.56	0.00	0.11	-A	+A
2782	6-8	27	Operational- Field Test	0.41	0.39	0.00	0.07	+A	-A
2783	6-8	28	Operational- Field Test	0.45	0.56	0.00	0.07	-C	-A
2784	6-8	29	Operational- Field Test	0.19	0.37	0.00	0.08	+C	+A
2785	6-8	30	Operational- Field Test	0.36	0.38	0.00	0.09	+A	-A
2786	6-8	31	Operational- Field Test	0.43	0.56	0.00	0.09	-A	-A
2787	6-8	32	Operational- Field Test	0.38	0.45	0.00	0.10	+C	+A

ITS Item ID	Grade	Item Position	Role	Adjusted Biserial/ Polyserial	Average Score	Access Limitation	Omit	DIF	
								Female vs. Male	Black vs. White
1863	6-8	33	Operational	0.52	0.74	0.00	0.02	-B	+A
1864	6-8	34	Operational	0.49	0.67	0.00	0.02	+A	+A
1866	6-8	35	Operational	0.66	0.65	0.00	0.03	+A	-A
1867	6-8	36	Operational	0.64	0.73	0.00	0.03	+A	+A
1868	6-8	37	Operational	0.34	0.62	0.00	0.02	-A	-A
2759	6-8	38	FieldTest	0.26	0.74	0.00	0.00	-A	+A
2760	6-8	39	FieldTest	0.52	0.67	0.00	0.00	-A	+A
2761	6-8	40	FieldTest	0.49	0.68	0.00	0.01	+A	+A
2763	6-8	41	FieldTest	0.03	0.63	0.00	0.01	-A	+A
2762	6-8	42	FieldTest	0.45	0.66	0.00	0.01	+A	-A
2764	6-8	43	FieldTest	0.42	0.51	0.00	0.01	-A	-A
2765	6-8	44	FieldTest	0.39	0.57	0.00	0.01	-A	-A
1254	6-8	45	Operational	0.40	0.58	0.00	0.00	-A	+A
1255	6-8	46	Operational	0.31	0.80	0.00	0.01	+A	-A
1256	6-8	47	Operational	0.44	0.77	0.00	0.00	-A	+A
1257	6-8	48	Operational	0.57	0.69	0.00	0.01	+A	+A
1258	6-8	49	Operational	0.58	0.78	0.00	0.01	-A	+A
1260	6-8	50	Operational	0.44	0.79	0.00	0.01	-A	-A
1235	6-8	51	Operational	0.50	0.70	0.00	0.00	+A	+A
1242	6-8	52	Operational	0.57	0.75	0.00	0.00	+A	+A
1237	6-8	53	Operational	0.40	0.76	0.00	0.00	-A	-A
1239	6-8	54	Operational	0.37	0.68	0.00	0.00	-A	+A
1243	6-8	55	Operational	0.48	0.83	0.00	0.00	+A	-A
1244	6-8	56	Operational	0.53	0.39	0.00	0.01	-A	+A
2947	6-8	57	Operational- Field Test	0.52	0.79	0.00	0.00	+A	+A
2948	6-8	58	Operational- Field Test	0.40	0.67	0.00	0.00	-A	+A
2949	6-8	59	Operational- Field Test	0.60	0.66	0.00	0.00	-A	-A
2950	6-8	60	Operational- Field Test	0.56	0.54	0.00	0.00	+A	+A
2951	6-8	61	Operational- Field Test	0.53	0.54	0.00	0.01	+A	+A
2952	6-8	62	Operational- Field Test	0.51	0.55	0.00	0.00	-A	-A
2911	6-8	63	FieldTest	0.48	0.67	0.00	0.01	+A	+A
2912	6-8	64	FieldTest	0.58	0.56	0.00	0.00	+A	+A
2913	6-8	65	FieldTest	0.46	0.52	0.00	0.00	+A	+A
2914	6-8	66	FieldTest	0.30	0.61	0.00	0.00	+A	+A

ITS Item ID	Grade	Item Position	Role	Adjusted Biserial/Polyserial	Average Score	Access Limitation	Omit	DIF	
								Female vs. Male	Black vs. White
2915	6-8	67	FieldTest	0.20	0.62	0.00	0.01	+A	+A
2916	6-8	68	FieldTest	0.17	0.65	0.00	0.00	-A	-A
2788	6-8	69	Operational-Field Test	0.53	0.79	0.00	0.00	-A	-A
2789	6-8	70	Operational-Field Test	0.51	0.44	0.00	0.00	+A	+A
2790	6-8	71	Operational-Field Test	0.24	0.74	0.00	0.00	-A	+A
2791	6-8	72	Operational-Field Test	0.00	0.51	0.00	0.00	+A	-A
2792	6-8	73	Operational-Field Test	0.45	0.57	0.00	0.00	+A	-A
2793	6-8	74	Operational-Field Test	0.57	0.59	0.00	0.00	+A	-A
1869	6-8	75	Operational	0.42	0.70	0.00	0.00	-A	-A
1870	6-8	76	Operational	0.30	0.55	0.00	0.00	+A	+A
1871	6-8	77	Operational	0.32	0.72	0.00	0.00	+A	-A
1872	6-8	78	Operational	0.34	0.60	0.00	0.00	+A	-A
1873	6-8	79	Operational	0.56	0.59	0.00	0.00	-A	-A
1874	6-8	80	Operational	0.47	0.60	0.00	0.00	+A	+A
2888	6-8	81	Operational-Field Test	0.55	0.74	0.00	0.00	+A	+A
2890	6-8	82	Operational-Field Test	0.30	0.66	0.00	0.00	-A	-A
2891	6-8	83	Operational-Field Test	0.57	0.72	0.00	0.00	+A	-A
2939	6-8	84	Operational-Field Test	0.60	0.60	0.00	0.00	+A	-A
2892	6-8	85	Operational-Field Test	0.48	0.49	0.00	0.00	+A	+A
2893	6-8	86	Operational-Field Test	0.27	0.55	0.00	0.00	+A	-A
2894	6-8	87	Operational-Field Test	0.45	0.51	0.00	0.00	-A	-A

**Exhibit D-6: Science and Biology Operational-Field-Test and Field-Test WINSTEPS Item Statistics**

ITS ID	MEASURE	COUNT	SCORE	ERROR	IN.MSQ	IN.ZSTD	OUT.MSQ	OUT.ZSTD
2728	-0.40244	268	494	0.065078	0.976	-0.309	0.968	-0.349
2729	-0.24699	263	449	0.063948	0.8916	-1.5991	0.8702	-1.6191
2730	0.116871	252	120	0.131313	1.0503	1.5711	1.1454	2.6511
2731	-0.75596	246	165	0.141997	0.9601	-0.679	0.9567	-0.599
2732	0.232531	236	108	0.135429	1.0019	0.071	0.9917	-0.149
2733	-0.74249	241	162	0.143294	0.9738	-0.439	0.9811	-0.249
2806	-0.13703	514	685	0.057813	0.9139	-1.7991	0.8908	-1.7191
2807	-0.16601	504	671	0.060567	0.957	-0.859	0.9475	-0.8491
2808	0.542733	507	458	0.055705	1.0458	1.161	1.1171	2.1711
2810	0.035039	508	621	0.057342	1.0045	0.121	1.0552	0.9911
2811	0.119428	498	564	0.064844	0.9418	-1.2291	0.9481	-1.0391
2812	-0.31958	500	719	0.061919	0.9535	-0.819	0.9997	0.021
2703	0.572645	851	1004	0.048088	1.1279	3.5211	1.1453	3.5611
2704	0.503941	852	1018	0.050786	1.0204	0.561	1.0333	0.851
2705	0.758553	853	932	0.044463	1.0263	0.831	1.0407	1.061
2706	0.585804	851	976	0.052121	0.9993	-0.009	1.0102	0.271
2707	0.639227	848	994	0.043842	1.3502	9.9014	1.4359	9.1814
2708	1.051104	847	797	0.050666	1.1131	2.9611	1.1136	2.9111
2709	0.299063	845	1144	0.047199	1.1154	3.0011	1.1414	2.7411
2753	0.248018	842	1104	0.05263	0.873	-3.3591	0.8573	-3.4991
2754	-0.12651	842	1339	0.052829	0.9006	-1.9691	0.7749	-3.2392
2755	0.644217	844	998	0.042535	0.8712	-4.3391	0.8303	-3.9892
2757	0.29452	842	1103	0.050859	0.8981	-2.7391	0.8861	-2.7191
2758	0.245705	843	1176	0.047493	1.0213	0.561	0.9888	-0.189
2756	0.979006	836	805	0.043044	0.9588	-1.309	0.9557	-1.139
2722	0.704264	832	918	0.052653	1.1348	3.3511	1.1392	3.3811
2726	0.358545	829	1113	0.046748	0.891	-3.0891	0.8589	-2.9491
2724	0.060564	832	1244	0.050312	1.0549	1.2311	1.1186	1.8611
2725	1.226229	831	690	0.046213	1.2332	6.2012	1.277	6.5513
2727	0.222298	830	1177	0.048035	1.0578	1.4411	1.0454	0.821
2723	1.171061	831	713	0.045272	1.0568	1.6411	1.0783	1.9911
2672	1.194718	769	347	0.075082	1.0084	0.431	1.0104	0.461
2673	0.42361	769	483	0.076875	1.1041	4.2711	1.2285	6.5212
2674	0.911227	768	397	0.074706	0.9956	-0.239	0.9964	-0.149
2675	0.447821	765	995	0.049548	1.0738	1.9411	1.0526	1.1211
2676	0.546304	764	964	0.047457	1.1545	4.1912	1.1783	3.6312
2677	0.343861	763	1001	0.053567	0.9333	-1.6791	0.9213	-1.7691

ITS ID	MEASURE	COUNT	SCORE	ERROR	IN.MSQ	IN.ZSTD	OUT.MSQ	OUT.ZSTD
2691	0.673399	586	738	0.053487	0.9354	-1.6491	0.8841	-2.2391
2692	0.40053	587	791	0.060792	0.9412	-1.2691	0.9081	-1.7491
2693	-0.07596	587	906	0.068031	0.8623	-2.4891	0.8052	-3.0392
2694	0.292865	585	800	0.064095	0.9199	-1.6691	0.9391	-1.1491
2695	1.020813	586	609	0.057474	1.2318	5.2512	1.2441	5.2012
2696	1.093519	583	583	0.054376	1.1287	3.1911	1.1567	3.4612
2317	-0.48143	184	360	0.076957	0.7778	-2.7092	0.729	-2.5793
2323	0.002206	171	88	0.158429	0.9196	-2.1691	0.8954	-2.2891
2324	-0.48013	171	106	0.163218	0.9716	-0.539	0.9386	-0.9091
2325	-0.26836	159	93	0.166391	0.9758	-0.519	0.9568	-0.729
2326	-0.09603	166	90	0.16096	0.948	-1.3591	0.9254	-1.5391
2327	0.099354	168	82	0.160488	1.0285	0.751	1.0164	0.351
2685	-0.25356	387	531	0.069597	0.9223	-1.3491	0.8939	-1.3791
2686	0.122141	383	427	0.079546	1.0637	1.0811	1.0628	1.0511
2687	0.955243	379	263	0.07138	1.2204	3.6612	1.3418	4.7313
2689	0.395667	387	385	0.072919	1.1119	2.0711	1.1812	3.1212
2688	0.341801	385	394	0.075253	1.145	2.5411	1.1785	3.0112
2690	0.094659	382	453	0.065615	0.9604	-0.819	0.9422	-0.9291
2748	0.583468	380	344	0.067071	1.1125	2.2511	1.1588	2.6212
2747	-0.1092	380	501	0.068311	1.0231	0.441	1.0111	0.171
2749	0.204853	376	415	0.077903	0.9854	-0.239	0.9786	-0.349
2750	0.037034	376	443	0.07814	0.9879	-0.189	0.9889	-0.169
2751	0.935356	376	273	0.071403	1.249	4.1412	1.3589	5.0314
2752	-0.20015	372	508	0.071725	0.9572	-0.729	0.9707	-0.359
2734	-0.69005	884	740	0.093752	0.9063	-1.6291	0.7139	-3.5793
2736	-0.53073	884	721	0.089522	0.9278	-1.3891	0.8266	-2.2792
2735	-0.51171	878	715	0.089558	0.9456	-1.0391	0.8675	-1.7191
2738	0.278457	883	598	0.07532	0.8932	-3.8091	0.8276	-3.9792
2739	0.181357	884	615	0.07641	0.9599	-1.289	0.9113	-1.8391
2740	-0.82986	882	754	0.098136	0.9175	-1.2891	1.0391	0.431
2776	0.668292	797	491	0.07604	0.9191	-3.4991	0.8914	-3.0391
2777	0.791518	796	972	0.047392	1.3009	7.7113	1.4204	7.4914
2778	0.992744	797	875	0.049152	1.2592	6.6513	1.2747	6.0013
2779	0.518405	796	516	0.07732	1.0681	2.5311	1.0711	1.6911
2780	1.225594	793	773	0.047584	1.3257	8.3113	1.3484	7.4013
2781	1.296405	792	753	0.051922	1.3463	8.2013	1.358	7.9814
2847	0.249099	770	1195	0.052584	0.8619	-2.9191	0.7509	-3.0792
2848	0.303427	771	1139	0.05342	1.0792	1.7211	1.0591	0.8911
2849	0.803008	770	929	0.050957	1.1086	2.7911	1.1057	2.2611
2850	0.931266	770	890	0.047551	0.9658	-0.959	0.9711	-0.589

ITS ID	MEASURE	COUNT	SCORE	ERROR	IN.MSQ	IN.ZSTD	OUT.MSQ	OUT.ZSTD
2851	0.17455	768	1129	0.057845	0.9587	-0.889	0.9033	-1.7091
2852	1.010383	769	852	0.048152	0.9043	-2.7691	0.8786	-2.7991
2716	1.193736	744	758	0.047051	1.2092	5.5612	1.216	4.3312
2718	0.642434	743	956	0.054088	1.0843	2.0311	1.112	2.2511
2719	0.383589	743	1072	0.054207	1.2118	4.4612	1.3367	4.8713
2721	0.066366	743	555	0.087053	0.972	-0.669	0.9524	-0.749
2720	1.226503	744	374	0.076885	1.046	2.191	1.0416	1.461
2717	1.709446	742	293	0.078995	1.1582	5.6412	1.1913	5.5612
2827	-0.8783	318	781	0.077457	0.8928	-1.0191	1.2714	1.5813
2828	-0.62119	317	738	0.07051	0.9717	-0.269	1.572	3.3616
2829	-1.40487	309	258	0.160913	0.8898	-1.0991	0.7475	-1.7193
2830	-0.81482	299	226	0.141758	0.8615	-2.0191	0.7216	-2.7493
2832	-0.38896	307	207	0.12914	0.8327	-3.4392	0.7344	-3.5993
2833	-0.15282	305	191	0.125955	1.2586	5.3913	1.4238	5.4214
2772	-0.03088	293	178	0.127103	0.8672	-3.2591	0.8274	-2.7692
2813	-0.30448	293	194	0.131036	1.0162	0.341	1.0053	0.091
2773	0.609679	296	138	0.124483	0.9904	-0.229	0.9743	-0.449
2774	-1.1077	295	236	0.152857	0.9343	-0.7391	0.8778	-0.8991
2814	0.459934	297	148	0.123918	0.8992	-2.7391	0.908	-1.7191
2775	-0.3942	297	201	0.131544	1.113	2.0811	1.3269	3.6013
2815	0.225242	308	347	0.075969	0.9052	-1.6491	0.8419	-1.8092
2816	0.272258	308	338	0.076548	1.3595	5.5114	1.3283	3.4313
2818	0.03809	309	361	0.089506	1.1001	1.4811	1.089	1.2411
2819	0.178764	306	344	0.085142	1.242	3.5612	1.2727	3.5013
2820	0.569671	309	287	0.075877	1.1023	1.6611	1.1533	1.7012
2821	0.550977	306	290	0.080383	1.5924	8.2316	1.8504	9.0019
2794	0.241603	271	375	0.094952	0.975	-0.319	1.0575	0.6611
2795	0.933974	271	294	0.082907	1.1494	2.2711	1.1957	2.3612
2796	0.389285	272	371	0.087351	0.9401	-0.8491	0.8765	-1.2391
2797	0.240283	273	384	0.092028	0.8617	-1.9491	0.8024	-2.1192
2798	0.090997	271	425	0.089349	1.0416	0.511	0.9398	-0.2891
2799	0.81476	272	313	0.080834	1.1431	2.1911	1.2209	2.3612
2697	0.677722	255	317	0.08854	1.3124	4.2413	1.3853	4.0114
2699	0.891384	255	289	0.087403	1.175	2.5512	1.2137	2.5612
2953	0.734954	255	307	0.090502	1.0185	0.291	1.0268	0.361
2700	0.007294	255	409	0.09839	0.9498	-0.4991	0.7717	-1.4592
2701	0.357329	255	370	0.08785	0.9259	-0.9791	0.833	-1.2692
2702	0.607515	255	323	0.09122	1.0396	0.591	1.02	0.261
2954	0.739851	253	310	0.085357	1.0364	0.571	1.0424	0.481
2854	0.881356	252	142	0.134083	1.0347	0.871	1.0047	0.101

ITS ID	MEASURE	COUNT	SCORE	ERROR	IN.MSQ	IN.ZSTD	OUT.MSQ	OUT.ZSTD
2855	0.297669	252	173	0.141993	0.942	-1.0391	0.8959	-1.1991
2856	0.809193	252	146	0.134573	1.0785	1.8911	1.0772	1.2711
2857	0.153232	252	180	0.145418	1.1001	1.5811	1.1399	1.4111
2858	0.542221	251	160	0.137884	0.9766	-0.489	0.9603	-0.529
2859	0.740598	251	304	0.090428	0.8821	-1.7791	0.8388	-2.0492
2666	-0.05502	218	367	0.114335	0.8019	-1.7092	0.6131	-2.1194
2667	0.085578	218	350	0.108725	1.0122	0.151	0.9192	-0.4491
2668	-0.1103	218	352	0.118039	1.0004	0.041	1.1083	0.7811
2669	0.421552	218	317	0.098557	0.9722	-0.309	1.0575	0.4811
2671	0.689558	218	292	0.090529	1.0358	0.501	1.0168	0.181

**Exhibit D-7: Social Studies Operational-Field-Test and Field-Test WINSTEPS Item Statistics**

ITS ID	MEASURE	COUNT	SCORE	ERROR	IN.MSQ	IN.ZSTD	OUT.MSQ	OUT.ZSTD
2919	-0.31349	377	477	0.066706	1.0255	0.511	1.0714	1.0811
2920	0.359954	376	318	0.066496	1.0342	0.721	1.0334	0.591
2921	-0.40941	373	490	0.069226	0.9669	-0.589	0.9368	-0.9191
2922	0.092321	376	378	0.076554	1.12	2.0911	1.1273	2.1711
2923	-0.38999	371	485	0.06894	1.0259	0.491	1.0529	0.7811
2917	0.349891	375	320	0.067038	0.9855	-0.289	0.9832	-0.269
2918	0.477469	367	298	0.073119	1.084	1.5411	1.0826	1.4211
2866	0.693809	380	263	0.068801	1.0654	1.1411	1.1257	1.6911
2867	0.799811	381	241	0.070728	1.1069	1.7011	1.145	1.7511
2868	-0.10782	382	446	0.067806	1.1866	3.6312	1.3349	4.7613
2869	0.647228	381	280	0.070284	1.0117	0.231	1.0961	1.4111
2870	-0.08689	380	436	0.068821	1.0728	1.4611	1.2767	4.0413
2871	0.125761	378	390	0.075552	1.0134	0.261	1.0364	0.641
2872	0.700686	381	263	0.069934	1.0777	1.3411	1.0945	1.2711
2924	0.392913	912	1112	0.047107	0.8837	-3.4091	0.8459	-3.7292
2925	0.255329	912	1209	0.044794	1.0937	2.5711	1.2305	3.7912
2926	0.564162	915	1053	0.042887	0.8146	-5.9692	0.7671	-5.1892
2927	0.93513	905	855	0.04569	0.9645	-1.019	0.9533	-1.169
2928	0.763877	911	941	0.04469	1.3721	9.8214	1.4313	9.2314
2929	0.644916	907	999	0.044216	1.0824	2.4011	1.155	3.3912
2902	0.365298	885	1124	0.046127	1.4357	9.9014	1.6326	9.9016
2903	0.102776	887	1246	0.048094	1.1379	3.4111	1.2311	3.7412
2904	0.43367	886	1054	0.051313	1.0411	1.081	1.0531	1.3011
2905	1.127992	887	757	0.046272	1.0227	0.631	1.0476	1.141
2906	-0.12961	885	1265	0.054404	0.9837	-0.379	0.9814	-0.359
2907	0.49621	887	1038	0.049642	1.0018	0.061	1.0331	0.821

ITS ID	MEASURE	COUNT	SCORE	ERROR	IN.MSQ	IN.ZSTD	OUT.MSQ	OUT.ZSTD
2908	0.624389	881	1003	0.043266	0.7947	-6.6292	0.7487	-5.5993
2909	0.557585	884	1007	0.050211	1.1535	3.9612	1.153	3.6812
2766	0.14397	870	1179	0.050652	0.8466	-4.1292	0.8148	-4.0292
2768	0.253648	869	1110	0.052283	0.9037	-2.5391	0.8817	-2.8391
2767	0.443851	865	1087	0.044462	0.8906	-3.3091	0.8887	-2.1091
2910	0.399478	869	1056	0.051535	1.0717	1.8511	1.0951	2.2411
2769	-0.11641	870	1329	0.051095	1.0075	0.181	0.9876	-0.149
2770	0.052702	866	1257	0.048864	0.9937	-0.139	0.958	-0.639
2771	0.799467	862	898	0.044376	0.9254	-2.2391	0.9083	-2.1391
2896	0.337756	827	1050	0.052043	1.0068	0.191	1.0016	0.051
2897	0.687659	827	913	0.052205	1.1587	3.9412	1.1807	4.2412
2898	1.022006	827	769	0.045158	1.0706	1.9311	1.0746	1.6311
2899	0.23751	826	1144	0.047886	1.2347	5.6812	1.4062	5.8514
2900	0.552108	829	959	0.053589	1.0627	1.5711	1.0785	1.8711
2901	1.048594	826	754	0.044814	0.9942	-0.149	0.9828	-0.359
2940	0.274631	779	1042	0.05314	0.8772	-3.1391	0.8381	-3.4192
2941	0.217468	779	1042	0.055448	1.0149	0.371	1.0319	0.681
2942	0.507783	779	986	0.04747	0.8981	-2.8991	0.8889	-2.1091
2943	0.532467	779	957	0.049915	1.3828	9.1814	1.4054	7.7214
2944	0.826949	777	839	0.046215	0.8696	-3.8691	0.8464	-3.4392
2946	-0.08296	776	1165	0.056767	0.8935	-2.3191	0.8459	-2.5892
2874	-0.20416	288	359	0.086193	1.0184	0.301	0.9953	-0.039
2875	0.205896	293	309	0.075786	1.0575	1.0711	1.0375	0.591
2877	-0.14098	290	348	0.08716	1.0075	0.141	0.9894	-0.129
2878	0.114011	288	322	0.074187	1.0718	1.3211	1.0733	1.0011
2879	0.719403	286	217	0.079425	1.1296	2.1111	1.2056	2.4912
2880	0.060468	282	315	0.086852	0.9314	-1.0891	0.9096	-1.3591
2876	-0.00833	278	314	0.095401	0.9058	-1.3491	0.901	-1.4191
2782	0.690423	303	237	0.074622	1.0766	1.3411	1.0896	1.1011
2783	0.138117	303	338	0.074509	1.0688	1.2611	1.0782	1.0411
2784	0.82243	298	221	0.080545	1.2622	3.9213	1.3689	4.3714
2785	0.766172	292	224	0.078851	1.1118	1.8111	1.1555	1.9512
2786	0.084126	293	330	0.085372	1.0056	0.111	1.0395	0.601
2787	0.515489	292	263	0.073124	1.1052	1.9711	1.067	0.8811
2759	0.165522	918	1356	0.049859	1.1063	2.4511	1.2259	3.3812
2760	0.509045	921	1238	0.04411	0.9163	-2.4591	0.8678	-2.2091
2761	0.404042	918	1247	0.047877	0.9218	-2.1391	0.9122	-1.7091
2763	0.652517	915	1148	0.044381	1.4424	9.9014	1.6859	9.9017
2762	0.417234	917	1210	0.050026	0.9576	-1.119	0.9286	-1.5691
2764	1.076248	915	927	0.044924	1.0459	1.361	1.0394	0.961

ITS ID	MEASURE	COUNT	SCORE	ERROR	IN.MSQ	IN.ZSTD	OUT.MSQ	OUT.ZSTD
2765	0.824925	912	1033	0.048737	1.046	1.281	1.0386	0.961
2947	-0.05429	883	1397	0.054993	0.8853	-2.3791	0.9155	-1.1791
2948	0.524591	883	1194	0.045815	1.0724	1.9911	1.0887	1.4811
2949	0.624597	882	1157	0.043956	0.8554	-4.4991	0.7851	-3.7592
2950	0.994936	882	951	0.046251	0.911	-2.6991	0.874	-3.1691
2951	1.017208	878	942	0.043395	0.9737	-0.809	0.9862	-0.279
2952	0.919379	878	969	0.051074	0.9447	-1.4891	0.9212	-1.9991
2911	0.4493	841	1132	0.052113	0.9017	-2.5591	0.8768	-2.6091
2912	0.96261	845	953	0.043438	0.8714	-4.1791	0.8302	-3.4592
2913	1.095552	845	881	0.044769	0.988	-0.349	0.9933	-0.129
2914	0.743097	843	1021	0.050261	1.0631	1.6911	1.1468	3.2311
2915	0.737024	841	1046	0.046858	1.2182	5.9012	1.3069	5.6813
2916	0.622672	842	1099	0.04736	1.2276	5.9412	1.2962	5.1113
2788	-0.09184	819	1290	0.059644	0.8856	-2.3291	0.7911	-3.3692
2789	1.393835	818	720	0.045566	1.0356	0.991	1.0357	0.781
2790	0.319612	819	1218	0.050711	1.1545	3.4112	1.3154	4.0813
2791	1.149923	821	842	0.04667	1.5296	9.9015	1.7306	9.9017
2792	0.923391	821	934	0.050027	1.0043	0.131	0.9809	-0.439
2793	0.89599	817	964	0.044984	0.8915	-3.3991	0.8408	-3.2092
2888	0.130227	806	1191	0.057536	0.8677	-3.0391	0.8164	-3.4592
2890	0.565662	810	1075	0.05082	1.1485	3.6911	1.1068	2.0411
2891	0.308362	809	1160	0.054013	0.8511	-3.6491	0.7885	-4.0292
2939	0.868532	807	971	0.045265	0.863	-4.3091	0.8513	-2.8791
2892	1.250558	808	788	0.047113	1.0285	0.811	1.0255	0.611
2893	1.014154	809	884	0.052659	1.1765	4.3412	1.1901	4.3412
2894	1.157857	808	829	0.047601	1.043	1.221	1.0556	1.3011

## Appendix E: Marginal Reliability by Grade-Band, Subject, Starting Task, Gender, and Ethnic Group

**Exhibit E-1: Marginal Reliability by Starting Task and Grade-Band for ELA**

Initial Task	Statistic	Elementary	Middle	High
1	N	338	295	95
	$\bar{\sigma}_{e^*}$	11.52	14.25	13.71
	Reliability	0.90	0.91	0.92
3	N	328	242	70
	$\bar{\sigma}_{e^*}$	8.66	10.31	9.12
	Reliability	0.88	0.85	0.77
6	N	845	916	248
	$\bar{\sigma}_{e^*}$	12.25	13.64	15.07
	Reliability	0.84	0.86	0.88

**Exhibit E-2: Marginal Reliability by Starting Task and Grade-Band for Mathematics**

Initial Task	Statistic	Elementary	Middle	High
1	N	309	270	87
	$\bar{\sigma}_{e^*}$	11.82	12.95	14.03
	Reliability	0.90	0.89	0.93
3	N	369	298	91
	$\bar{\sigma}_{e^*}$	9.31	9.64	8.67
	Reliability	0.86	0.63	0.66
6	N	820	892	233
	$\bar{\sigma}_{e^*}$	11.66	13.33	12.19
	Reliability	0.87	0.80	0.83

**Exhibit E-3: Marginal Reliability by Starting Task and Grade-Band for Science/Biology**

Initial Task	Statistic	Elementary	Middle	High
1	N	275	190	233
	$\bar{\sigma}_e^*$	17.83	16.84	25.34
	Reliability	0.88	0.89	0.90
3	N	273	221	77
	$\bar{\sigma}_e^*$	12.23	12.06	23.78
	Reliability	0.80	0.82	0.87
7	N	470	577	90
	$\bar{\sigma}_e^*$	15.90	16.15	29.35
	Reliability	0.80	0.82	0.78

**Exhibit E-4: Marginal Reliability by Starting Task and Grade-Band for Social Studies**

Initial Task	Statistic	Elementary	Middle	High
1	N	191	169	X
	$\bar{\sigma}_e^*$	14.80	16.95	X
	Reliability	0.88	0.89	X
3	N	207	145	X
	$\bar{\sigma}_e^*$	10.67	13.31	X
	Reliability	0.88	0.90	X
7	N	601	683	X
	$\bar{\sigma}_e^*$	14.76	14.91	X
	Reliability	0.87	0.87	X

**Exhibit E-5: Marginal Reliability by Subject, Gender, and Grade-Band**

Subject	Gender	Elementary	Middle	High	Overall
ELA	Female	0.930	0.931	0.942	0.935
	Male	0.928	0.927	0.934	0.931
Math	Female	0.939	0.904	0.932	0.924
	Male	0.936	0.901	0.929	0.922
Science	Female	0.909	0.916		0.913
	Male	0.911	0.911		0.912
Biology	Female			0.912	0.912
	Male			0.910	0.910

Subject	Gender	Elementary	Middle	High	Overall
Social Studies	Female	0.936	0.928		0.932
	Male	0.932	0.931		0.932

**Exhibit E-6: Marginal Reliability by Subject, Major Ethnic Group, and Grade-Band**

Subject	Ethnicity	Elementary	Middle	High	Overall
ELA	African American	0.926	0.923	0.934	0.930
	White	0.930	0.929	0.937	0.933
Math	African American	0.935	0.903	0.936	0.923
	White	0.939	0.902	0.915	0.922
Science	African American	0.909	0.909		0.910
	White	0.913	0.912		0.914
Biology	African American			0.913	0.913
	White			0.904	0.904
Social Studies	African American	0.932	0.929		0.932
	White	0.934	0.926		0.931

## **Appendix F: Score Report Sample**

**INDIVIDUAL STUDENT REPORT**

Prepared Especially for the Family of  
**Kelly Adams**

**Date of Birth:** 09/20/2004  
**Student ID:** 123456123456  
**School District:** Columbia  
**School:** Alfonso Elementary

Spring 2014



## The South Carolina Alternate Assessment (SC-Alt)

### Kelly participated in the South Carolina Alternate Assessment (SC-Alt) during the spring of 2014.

She took the elementary school form of the test, which is based on academic standards from grades 3 to 5. This report is designed to provide you with information on your child's performance on this assessment.

The SC-Alt is a test designed for students with significant cognitive disabilities who participate in a school curriculum that includes academic and functional skill instruction. The alternate assessment only tests students' achievement in English language arts (ELA), mathematics, science, and social studies. Individualized Education Program (IEP) reports and other methods provide parents with information on how students are progressing in the other areas.

#### What is the SC-Alt?

- The SC-Alt includes performance tasks in each subject area. Students may complete the tasks by using their usual method of communication. This may include pointing or gazing at answer choices; selecting objects, pictures, or picture symbols that represent an answer choice; or reading letters, words, or sentences to complete the task.
- The tasks are linked to the state academic content standards in four areas: English language arts (ELA), mathematics, science, and social studies.
- Students are assigned a test form based on their age. Students ages 8–10 are assigned to the elementary school form; students ages 11–13 are assigned to the middle school form; and students age 15 take the high school form.

#### How are scores reported and used?

- Four achievement levels (Level 1, Level 2, Level 3, and Level 4) have been established for the SC-Alt. Achievement levels describe how students are doing in relation to the state academic standards. Your child's performance is also reported as a scale score that allows parents to monitor growth from year to year.
- SC-Alt is also a state and federal accountability measure and the results provide information on how schools and districts are doing as well.

#### Where can I get more information about SC-Alt and my child's performance?

- You can contact your child's teacher or school for more information.
- You can view examples of tasks, information about expectations at each achievement level, and scale score tables on the South Carolina Department of Education Web site at <http://ed.sc.gov/agency/programs-services/48/>.



The South Carolina Department of Education

Spring 2014  
Kelly Adams

The SC-Alt



## Mathematics

Kelly scored at **Level 3** with a scale score of **480** in mathematics.

Students who score at Level 3 should be able to:

- add and subtract simple numbers;
- count and compare objects in a group;
- compare objects by color, size, or shape;
- identify three-dimensional shapes;
- read information in a graph.

	4	Students performing at Level 4 demonstrate and apply academic skills and competencies in mathematics.
Your Child's Level	3	Students performing at Level 3 demonstrate increasing academic skills and competencies in mathematics.
	2	Students performing at Level 2 demonstrate foundational academic skills and competencies in mathematics.
	1	Students performing at Level 1 may demonstrate emerging academic skills and competencies in mathematics.

### How you can support Kelly's learning

- Encourage your child to practice adding and subtracting, with or without a calculator, to make purchases.
- Assist your child in comparing the shapes of items in the cart while at the grocery store. For example, a soup can (cylinder) is a different shape than a cracker box (rectangular prism).
- Help your child to sort laundry by color.
- Use a ruler to measure the length of objects throughout the home.
- Assist your child in sorting candy by color. Create a line graph by lining up pieces of candy next to each other by color. Ask your child to count the pieces to determine which color line has the most candy.



## English Language Arts

Kelly scored at **Level 4** with a scale score of **495** in ELA.

Students who score at Level 4 should be able to:

- identify the main idea and make predictions about what will happen next in a story;
- write a simple story;
- follow two-step directions;
- take turns appropriately during conversations.

Your Child's Level	4	Students performing at Level 4 demonstrate and apply academic skills and competencies in reading, writing, and research.
	3	Students performing at Level 3 demonstrate increasing academic skills and competencies in reading, writing, and research.
	2	Students performing at Level 2 demonstrate foundational academic skills and competencies in reading, writing, and research.
	1	Students performing at Level 1 may demonstrate emerging academic skills and competencies in reading, writing, and research.

### How you can support Kelly's learning

- Read a variety of materials with your child (books, newspaper headlines, restaurant signs and menus).
- Ask your child what the book was about and what he or she thinks will happen next in the text.
- Assist your child in creating a list of likes and dislikes about his or her favorite character in a story or movie.
- Assist your child in creating a different ending to a story.
- Encourage your child to write a note or e-mail to a friend or relative.

Spring 2014  
Kelly Adams

## Science

Kelly scored at **Level 1** with a scale score of **270** in science.

Students who score at Level 1 should be able to:

- use senses to observe the outcome of a simple scientific investigation;
- sequence growth patterns;
- observe and record daily weather conditions;
- recognize the sun and moon and relate them to day and night;
- recognize that objects move when force is applied.

4	Students performing at Level 4 demonstrate and apply academic skills and competencies in science.
3	Students performing at Level 3 demonstrate increasing academic skills and competencies in science.
2	Students performing at Level 2 demonstrate foundational academic skills and competencies in science.
<b>1</b>	Students performing at Level 1 may demonstrate emerging academic skills and competencies in science.

Your Child's Level

### How you can support Kelly's learning

- Ask your child what will happen when you flip or press the "On" switch for the television, lights, washing machine, computer.
- Ask your child to point to the body part that is used to see, taste, smell, or hear (eyes, mouth, nose, or ear).
- Discuss daily weather conditions with your child.



## Social Studies

Kelly scored at **Level 1** with a scale score of **270** in social studies.

Students who score at Level 1 should be able to:

- identify self from others;
- respond appropriately to a person of authority in the home or at school;
- follow rules;
- engage in turn-taking;
- begin to distinguish between past and present.

4	Students performing at Level 4 demonstrate and apply academic skills and competencies in social studies.
3	Students performing at Level 3 demonstrate increasing academic skills and competencies in social studies.
2	Students performing at Level 2 demonstrate foundational academic skills and competencies in social studies.
<b>1</b>	Students performing at Level 1 may demonstrate emerging academic skills and competencies in social studies.

Your Child's Level

### How you can support Kelly's learning

- Help your child find her picture in a family album or photo.
- Help your child find a picture of her mother, father, or caregiver.
- Help your child follow rules by going to bed when an alarm rings or sitting in a chair at mealtime.
- Help your child engage in taking turns in picking out an activity, food, or song.
- Help your child choose a storybook about South Carolina and read it to her.

Spring 2014  
Kelly Adams

The SC-Alt



The following areas are tested in Mathematics:

#### Number and Operations

- whole numbers
- fractions
- addition and subtraction
- multiplication and division

#### Algebra

- patterns and their relationships

#### Geometry

- attributes of objects such as shape, size, color
- identification of two- and three-dimensional shapes

#### Measurement

- money
- length, liquid volume, and mass and weight
- time
- equivalences

#### Data Analysis and Probability

- data collection and representation
- data analysis
- probability



The following areas are tested in English Language Arts:

#### Reading

- comprehending a variety of texts (such as fiction, nonfiction, poetry, and drama)  
*Note: Reading materials may include objects, pictures or photographs, picture symbols, letters, and words.*

#### Writing

- developing written communications (notes, stories) using the student's typical method of communication

#### Research

- accessing and using information from a variety of sources
- communicating their own ideas and ideas of others\*  
*\*Students' typical method of communication, verbal or nonverbal, may be facilitated by using objects, pictures or photographs, picture symbols, letters and words, voice output devices, or assistive technology.*



The following areas are tested in Science:

**Scientific Inquiry** involves studying scientific processes and skills such as:

- observing
- classifying
- predicting what will happen in a simple scientific experiment

#### Life Science

- basic needs of plants and animals
- their structures and habitats

#### Earth Science

- weather
- objects in the sky (sun and moon)
- earth materials (rocks and soil)

#### Physical Science

- characteristics of objects
- the effect of force on the motion of objects
- light, heat, and electricity



The following areas are tested in Social Studies:

**Social Studies Literacy Elements** are concepts required for understanding this subject such as:

- distinguishing between past, present, and future
- demonstrating responsible citizenship within the school community, the local community, and national communities
- creating and using timelines
- understanding the relationship between people and the land

**Academic Standards** include concepts related to specific historical time frames:

- history
- geography
- political science/government
- economics

## SCHOOL REPORT

Prepared Especially for  
**Alfonso High**

School District: Columbia  
SIDN Code: 2234456

Spring 2014



# The South Carolina Alternate Assessment (SC-Alt)

### Your students participated in the South Carolina Alternate Assessment (SC-Alt) during the spring of 2014.

The SC-Alt is a test designed for students with significant cognitive disabilities who participate in a school curriculum that includes both academic and functional skill instruction.

This report provides information on your students' achievement in English language arts (ELA), mathematics, and biology. Individualized Education Programs (IEP) and other reports provide educators and parents with information on how students are progressing in other areas.

Students at your school may have taken either the elementary, middle, or high school form. Students are assigned a test form based on each student's age. Students ages 8–10 are assigned to the elementary school form; students ages 11–13 are assigned to the middle school form; and students age 15 are assigned to the high school form.

#### More about SC-Alt

- SC-Alt is an assessment that includes a series of performance tasks in each subject area and allows students to respond by using their typical method of communication. This may include pointing or gazing at response options; selecting objects, pictures, or picture symbols that represent an answer choice; or reading letters, words, or sentences to complete a task.
- The tasks are linked to the academic content standards through the South Carolina Extended Standards documents in ELA, mathematics, and biology. The Extended Standards provide the link to the state grade level academic standards at lower levels of complexity or with greater focus on introductory or prerequisite skills. Go to <http://ed.sc.gov/agency/programs-services/48/> to view these documents and for additional information on SC-Alt.
- Results are reported as achievement levels and scale scores. The SC-Alt scale scores are used in federal and state accountability calculations. See the *2014 Score Report User's Guide* for additional information on achievement levels and scale scores and guidance on interpreting the school score reports.



The South Carolina Department of Education

Spring 2014  
2234456



	Student ID	Demographic Information			SC-Alt Test Form
Teacher Name	Student ID	Date of Birth	Gender	Ethnicity	Elementary School (ES), Middle School (MS), High School (HS)
Student Name					
<b>Miller, Johnathan</b>					
Dahl, Stephanie	587412589457	02/15/98	F	B	HS
Eggers, Leslie	541265891203	06/02/98	F	W	HS
Melendez, Alejandro	845790125443	05/12/98	M	H	HS
O’Laughlin, James	549321024785	08/18/98	M	W	HS
Stewart, David	123456123456	03/25/98	M	W	HS
<b>Silvers, Laura</b>					
Brown, Keisha	875426985001	04/04/98	F	B	HS
Cartwright, Lana	587412698741	07/25/98	F	W	HS
Diaz, Jefferson	687412589458	01/15/98	M	H	HS
Wright, David	945790125444	05/05/98	M	B	HS
Yi, Soon	649321024786	08/08/98	F	A	HS
<b>NT - Not Tested</b> <b>NV - Not a Valid Test Administration</b>					

**Note:** Students ages 9 and 12 (grades 4 and 7) were tested in both science and social studies; students ages 8, 10, 11, and 13 (grades 3, 5, 6, and 8) were tested in either science or social studies (but not both). Students age 15 were tested in biology. **Social studies is not tested at the high school level.**

<b>Score Summary</b>	Number Scoring Achievement <b>Level 1</b>
	Number Scoring Achievement <b>Level 2</b>
	Number Scoring Achievement <b>Level 3</b>
	Number Scoring Achievement <b>Level 4</b>
	Number <b>Not Tested</b> (includes <b>NV</b> )

 Mathematics		 English Language Arts		 Biology	
Scale Score Range 260 – 740	Achievement Level 1-4	Scale Score Range 260 – 740	Achievement Level 1-4	Scale Score Range 260 – 740	Achievement Level 1-4
500	3	630	4	NV	NV
335	1	NT	NT	NT	NT
NT	NT	450	2	469	2
527	3	480	2	465	2
520	3	485	2	270	1
598	4	261	1	515	3
NV	NV	465	2	388	1
470	2	494	3	731	4
422	1	490	3	540	4
517	3	644	4	440	2

Mathematics	English Language Arts	Biology
2	1	2
1	4	3
4	2	1
1	2	2
2	1	2

Spring 2014  
2234456

The SC-Alt



### The following areas are tested in Mathematics:

#### Number and Operations

- whole numbers
- fractions
- addition and subtraction
- multiplication and division

#### Algebra

- patterns and their relationships

#### Geometry

- attributes of objects such as shape, size, color
- identification of two- and three-dimensional shapes

#### Measurement

- money
- length, liquid volume, and mass and weight
- time
- equivalences

#### Data Analysis and Probability

- data collection and representation
- data analysis
- probability



### The following areas are tested in English Language Arts:

#### Reading

- comprehending a variety of texts (such as fiction, nonfiction, poetry, and drama)  
*Note: Reading materials may include objects, pictures or photographs, picture symbols, letters, and words.*

#### Writing

- developing written communications (notes, stories) using the student's typical method of communication

#### Research

- accessing and using information from a variety of sources
- communicating their own ideas and ideas of others\*  
*\*Students' typical method of communication, verbal or nonverbal, may be facilitated by using objects, pictures or photographs, picture symbols, letters and words, voice output devices, or assistive technology.*



### The following areas are tested in Biology:

**Scientific Inquiry** involves studying scientific processes and skills such as:

- observing
- classifying
- predicting what will happen in a simple scientific experiment

#### Structure and Function of Cells

- living things are composed of cells
- parts of cells and function

#### Flow of Energy within Living Systems

- how plants make their own food (photosynthesis)
- food as protein, carbohydrate, or fat
- ecosystems

#### Heredity

- DNA and genes
- inherited traits (characteristics)

#### Diversity of Life

- favorable or unfavorable traits for the survival of living things
- change over time

#### Ecology

- inter-relationships in ecosystems
- environmental changes caused by human activities

**Appendix G: Student Performance by Demographics, Grade-Band, and Subject Area**

Exhibit G-1: Performance by Grade-Band and Demographics—ELA<sup>5</sup>

ELA	Grade-Band														
	Elementary School					Middle School					High School				
	N	Scale Score		Ach. Level		N	Scale Score		Ach. Level		N	Scale Score		Ach. Level	
		Mean	SD	<3	>=3		Mean	SD	<3	>=3		Mean	SD	<3	>=3
<b>STUDENT'S AGE</b>															
7	1	–	–	–	–	.	.	.	.	.	.	.	.	.	.
8	482	490	41	95	387	.	.	.	.	.	.	.	.	.	.
9	526	496	47	85	441	1	–	–	–	–	.	.	.	.	.
10	516	501	55	88	428	1	–	–	–	–	.	.	.	.	.
11	3	–	–	–	–	482	511	55	78	404	.	.	.	.	.
12	.	.	.	.	.	512	517	54	63	449	.	.	.	.	.
13	.	.	.	.	.	471	517	55	61	410	.	.	.	.	.
14	.	.	.	.	.	1	–	–	–	–	1	–	–	–	–
15	.	.	.	.	.	.	.	.	.	.	407	514	65	92	315
16	.	.	.	.	.	.	.	.	.	.	12	549	55	1	11
24	.	.	.	.	.	.	.	.	.	.	1	–	–	–	–
<b>STUDENT'S ETHNICITY</b>															
African American	746	498	49	117	629	695	520	56	85	610	221	515	67	51	170
American Indian/Alaska Native	5	–	–	–	–	3	–	–	–	–	1	–	–	–	–
Asian	21	490	35	4	17	21	510	33	1	20	5	–	–	–	–
Double-Bubbled	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Hispanic	101	486	37	29	72	96	505	58	15	81	20	518	73	3	17

<sup>5</sup> Note: Data marked ‘–’ are suppressed because the subgroup contains fewer than 10 students.

ELA	Grade-Band														
	Elementary School					Middle School					High School				
	N	Scale Score		Ach. Level		N	Scale Score		Ach. Level		N	Scale Score		Ach. Level	
		Mean	SD	<3	>=3		Mean	SD	<3	>=3		Mean	SD	<3	>=3
Multi-Race	40	512	49	7	33	49	507	60	8	41	12	523	84	3	9
Native Hawaiian/Other Pacific Islander	.	.	.	.	.	3	–	–	–	–	.	.	.	.	.
Other	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Unknown	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
White	615	494	48	109	506	601	512	52	91	510	162	516	61	34	128
<b>STUDENT'S GENDER</b>															
Female	505	494	47	98	407	489	513	61	76	413	144	509	71	40	104
Male	1023	497	49	170	853	979	516	51	127	852	277	519	61	53	224
Unknown	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<b>ESL (LANGUAGE)</b>															
Unknown	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Pre-Functional	83	487	36	25	58	59	501	49	13	46	13	500	74	4	9
Beginner	3	–	–	–	–	3	–	–	–	–	.	.	.	.	.
Intermediate	.	.	.	.	.	1	–	–	–	–	.	.	.	.	.
Advanced	.	.	.	.	.	.	.	.	.	.	1	–	–	–	–
Full English Proficient	.	.	.	.	.	1	–	–	–	–	.	.	.	.	.
Title III First Year Exited	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Title III Second+ Year Exited	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
English Speaker I	5	–	–	–	–	3	–	–	–	–	1	–	–	–	–

ELA	Grade-Band														
	Elementary School					Middle School					High School				
	N	Scale Score		Ach. Level		N	Scale Score		Ach. Level		N	Scale Score		Ach. Level	
		Mean	SD	<3	>=3		Mean	SD	<3	>=3		Mean	SD	<3	>=3
English Speaker II	1437	496	49	241	1196	1399	516	55	190	1209	406	516	65	89	317
Pre-Functional Waiver	.	.	.	.	.	2	–	–	–	–	.	.	.	.	.
Beginner Waiver	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Intermediate Waiver	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Advanced Waiver	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<b>ELIGIBLE FOR FREE OR REDUCED-PRICE LUNCH</b>															
Free Meals	1056	501	47	170	886	966	521	55	118	848	277	520	62	55	222
Reduced	105	498	38	16	89	120	512	56	17	103	40	525	50	6	34
Full-Pay Meals	367	481	52	82	285	382	501	52	68	314	104	500	75	32	72
Unknown	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<b>STUDENT'S DISABILITIES</b>															
Missing	1	–	–	–	–	.	.	.	.	.	.	.	.	.	.
Autism	452	493	36	74	378	348	511	42	51	297	83	507	55	21	62
Deaf/Blindness	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Developmental Delay	119	500	37	18	101	2	–	–	–	–	.	.	.	.	.
Emotional Handicapped	2	–	–	–	–	7	–	–	–	–	1	–	–	–	–
Educable Mentally Disability	397	523	34	7	390	436	547	41	3	433	91	563	48	5	86

ELA	Grade-Band														
	Elementary School					Middle School					High School				
	N	Scale Score		Ach. Level		N	Scale Score		Ach. Level		N	Scale Score		Ach. Level	
		Mean	SD	<3	>=3		Mean	SD	<3	>=3		Mean	SD	<3	>=3
Hearing Handicapped	9	–	–	–	–	8	–	–	–	–	1	–	–	–	–
Learning Disability	32	537	43	1	31	16	538	113	2	14	8	–	–	–	–
Multiple Disable	10	489	32	2	8	9	–	–	–	–	6	–	–	–	–
Other Health Impaired	62	503	64	11	51	75	534	48	5	70	16	523	90	2	14
Orthopedically Handicapped	19	498	69	3	16	28	509	70	6	22	7	–	–	–	–
Profoundly Mentally Handicapped	96	417	63	80	16	121	437	71	83	38	45	436	77	31	14
Speech	16	499	31	3	13	7	–	–	–	–	3	–	–	–	–
Traumatic Brain Injury	10	424	120	4	6	11	522	35	1	10	.	.	.	.	.
Trainable Mental Disability	292	485	32	59	233	391	503	37	48	343	157	513	39	28	129
Visually Handicapped	11	459	55	5	6	9	–	–	–	–	3	–	–	–	–
<b>TOTAL</b>	1528	496	48	268	1260	1468	515	55	203	1265	421	516	65	93	328

Exhibit G-2: Performance by Grade-Band and Demographics—Mathematics<sup>6</sup>

Math	Grade-Band														
	Elementary School					Middle School					High School				
	N	Scale Score		Ach. Level		N	Scale Score		Ach. Level		N	Scale Score		Ach. Level	
		Mean	SD	<3	>=3		Mean	SD	<3	>=3		Mean	SD	<3	>=3
<b>STUDENT'S AGE</b>															
7	1	–	–	–	–	.	.	.	.	.	.	.	.	.	.
8	480	496	44	106	374	.	.	.	.	.	.	.	.	.	.
9	524	505	51	86	438	1	–	–	–	–	.	.	.	.	.
10	512	510	58	96	416	1	–	–	–	–	.	.	.	.	.
11	3	–	–	–	–	484	505	46	110	374	.	.	.	.	.
12	.	.	.	.	.	514	511	46	93	421	.	.	.	.	.
13	.	.	.	.	.	473	510	46	107	366	.	.	.	.	.
14	.	.	.	.	.	2	–	–	–	–	1	–	–	–	–
15	.	.	.	.	.	.	.	.	.	.	403	504	53	130	273
16	.	.	.	.	.	.	.	.	.	.	12	536	35	1	11
24	.	.	.	.	.	.	.	.	.	.	1	–	–	–	–
<b>STUDENT'S ETHNICITY</b>															
Unknown	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Double-bubbled	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Asian	21	501	37	4	17	21	509	23	2	19	4	–	–	–	–
African American	745	508	55	124	621	698	513	48	127	571	218	506	53	73	145
Hispanic	101	495	39	30	71	95	498	54	22	73	20	515	54	4	16
American Indian/Alaska Native	5	–	–	–	–	3	–	–	–	–	1	–	–	–	–

<sup>6</sup> Note: Data marked ‘–’ are suppressed because the subgroup contains fewer than 10 students.

Math	Grade-Band														
	Elementary School					Middle School					High School				
	N	Scale Score		Ach. Level		N	Scale Score		Ach. Level		N	Scale Score		Ach. Level	
		Mean	SD	<3	>=3		Mean	SD	<3	>=3		Mean	SD	<3	>=3
Multi-race	39	518	49	6	33	49	502	39	13	36	12	513	73	5	7
Other	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Native Hawaiian/Other Pacific Islander	.	.	.	.	.	3	–	–	–	–	.	.	.	.	.
White	609	500	50	123	486	606	507	43	144	462	162	502	51	49	113
STUDENT'S GENDER															
Female	502	501	51	111	391	490	504	51	106	384	142	497	54	53	89
Male	1018	506	52	177	841	985	511	43	205	780	275	510	51	78	197
Unknown	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
ESL (LANGUAGE)															
Unknown	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Pre-Functional	83	494	40	25	58	58	496	53	16	42	13	509	64	4	9
Beginner	3	–	–	–	–	3	–	–	–	–	.	.	.	.	.
Intermediate	.	.	.	.	.	1	–	–	–	–	.	.	.	.	.
Advanced	.	.	.	.	.	.	.	.	.	.	1	–	–	–	–
Full English Proficient	.	.	.	.	.	1	–	–	–	–	.	.	.	.	.
Title III First Year Exited	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Title III Second+ Year Exited	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
English Speaker I	5	–	–	–	–	3	–	–	–	–	1	–	–	–	–
English Speaker II	1429	505	52	261	1168	1407	509	45	295	1112	402	505	52	127	275

Math	Grade-Band														
	Elementary School					Middle School					High School				
	N	Scale Score		Ach. Level		N	Scale Score		Ach. Level		N	Scale Score		Ach. Level	
		Mean	SD	<3	>=3		Mean	SD	<3	>=3		Mean	SD	<3	>=3
Pre-Functional Waiver	.	.	.	.	.	2	-	-	-	-	.	.	.	.	.
Beginner Waiver	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Intermediate Waiver	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Advanced Waiver	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<b>ELIGIBLE FOR FREE OR REDUCED-PRICE LUNCH</b>															
Free Meals	1048	509	51	174	874	969	513	47	175	794	274	509	51	83	191
Reduced	105	507	39	18	87	120	509	42	25	95	41	510	36	8	33
Full-Pay Meals	367	488	52	96	271	386	499	43	111	275	102	493	59	40	62
Unknown	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<b>STUDENT'S DISABILITIES</b>															
Missing	1	-	-	-	-	.	.	.	.	.	.	.	.	.	.
Autism	449	505	42	82	367	354	511	40	75	279	84	508	47	27	57
Deaf/Blindness	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Developmental Delay	118	507	39	18	100	2	-	-	-	-	.	.	.	.	.
Emotional Handicapped	2	-	-	-	-	7	-	-	-	-	1	-	-	-	-
Educable Mentally Disability	398	531	39	8	390	435	530	30	16	419	90	535	38	7	83
Hearing Handicapped	9	-	-	-	-	8	-	-	-	-	1	-	-	-	-

Math	Grade-Band														
	Elementary School					Middle School					High School				
	N	Scale Score		Ach. Level		N	Scale Score		Ach. Level		N	Scale Score		Ach. Level	
		Mean	SD	<3	>=3		Mean	SD	<3	>=3		Mean	SD	<3	>=3
Learning Disability	32	544	52	1	31	16	529	91	2	14	9	-	-	-	-
Multiple Disable	10	491	38	4	6	10	519	50	1	9	6	-	-	-	-
Other Health Impaired	62	510	52	10	52	75	519	45	10	65	15	497	67	4	11
Orthopedically Handicapped	19	503	71	4	15	28	500	40	7	21	6	-	-	-	-
Profoundly Mentally Handicapped	95	415	65	85	10	121	440	61	99	22	46	434	73	40	6
Speech	16	513	27	1	15	7	-	-	-	-	3	-	-	-	-
Traumatic Brain Injury	10	431	112	4	6	10	524	31	1	9	.	.	.	.	.
Trainable Mental Disability	288	491	35	64	224	393	500	34	94	299	153	507	28	42	111
Visually Handicapped	11	454	61	6	5	9	-	-	-	-	3	-	-	-	-
<b>TOTAL</b>	1520	504	52	288	1232	1475	509	46	311	1164	417	505	52	131	286

Exhibit G-3: Performance by Grade-Band and Demographics—Science/Biology<sup>7</sup>

Science/Biology	Grade-Band														
	Elementary School					Middle School					High School				
	N	Scale Score		Ach. Level		N	Scale Score		Ach. Level		N	Scale Score		Ach. Level	
		Mean	SD	<3	>=3		Mean	SD	<3	>=3		Mean	SD	<3	>=3
STUDENT'S AGE															
7	1	–	–	–	–	.	.	.	.	.	.	.	.	.	.
8	255	493	56	49	206	.	.	.	.	.	.	.	.	.	.
9	518	501	55	85	433	1	–	–	–	–	.	.	.	.	.
10	264	504	58	49	215	.	.	.	.	.	.	.	.	.	.
11	2	–	–	–	–	254	505	65	92	162	.	.	.	.	.
12	.	.	.	.	.	508	515	58	150	358	.	.	.	.	.
13	.	.	.	.	.	245	518	55	63	182	.	.	.	.	.
14	.	.	.	.	.	2	–	–	–	–	1	–	–	–	–
15	.	.	.	.	.	.	.	.	.	.	409	496	99	181	228
16	.	.	.	.	.	.	.	.	.	.	12	540	69	2	10
24	.	.	.	.	.	.	.	.	.	.	1	–	–	–	–
STUDENT'S ETHNICITY															
Unknown	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Double-bubbled	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Asian	18	496	32	3	15	17	505	36	5	12	5	–	–	–	–
African American	508	503	57	80	428	472	518	60	121	351	221	497	100	91	130
Hispanic	68	492	43	19	49	65	508	70	23	42	21	511	121	10	11

<sup>7</sup> Note: Data marked '–' are suppressed because the subgroup contains fewer than 10 students.

Science/Biology	Grade-Band														
	Elementary School					Middle School					High School				
	N	Scale Score		Ach. Level		N	Scale Score		Ach. Level		N	Scale Score		Ach. Level	
		Mean	SD	<3	>=3		Mean	SD	<3	>=3		Mean	SD	<3	>=3
American Indian/Alaska Native	5	–	–	–	–	2	–	–	–	–	1	–	–	–	–
Multi-race	30	519	63	4	26	37	509	69	14	23	12	512	147	5	7
Other	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Native Hawaiian/Other Pacific Islander	.	.	.	.	.	3	–	–	–	–	.	.	.	.	.
White	411	495	57	77	334	414	509	57	142	272	163	497	90	75	88
STUDENT'S GENDER															
Female	358	499	58	67	291	336	507	62	111	225	145	490	100	70	75
Male	682	500	55	116	566	674	516	58	196	478	278	502	97	113	165
Unknown	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
ESL (LANGUAGE)															
Unknown	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Pre-Functional	63	488	39	19	44	40	503	47	19	21	14	491	113	8	6
Beginner	2	–	–	–	–	2	–	–	–	–	.	.	.	.	.
Intermediate	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Advanced	.	.	.	.	.	.	.	.	.	.	1	–	–	–	–
Full English Proficient	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Title III First Year Exited	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Title III Second+ Year Exited	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Science/Biology	Grade-Band														
	Elementary School					Middle School					High School				
	N	Scale Score		Ach. Level		N	Scale Score		Ach. Level		N	Scale Score		Ach. Level	
		Mean	SD	<3	>=3		Mean	SD	<3	>=3		Mean	SD	<3	>=3
English Speaker I	3	–	–	–	–	2	–	–	–	–	1	–	–	–	–
English Speaker II	972	500	57	164	808	964	513	60	287	677	407	498	98	174	233
Pre-Functional Waiver	.	.	.	.	.	2	–	–	–	–	.	.	.	.	.
Beginner Waiver	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Intermediate Waiver	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Advanced Waiver	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<b>ELIGIBLE FOR FREE OR REDUCED-PRICE LUNCH</b>															
Free Meals	714	506	56	105	609	672	520	58	169	503	280	507	101	107	173
Reduced	76	500	47	16	60	76	503	64	25	51	41	500	84	16	25
Full-Pay Meals	250	482	55	62	188	262	497	57	113	149	102	474	92	60	42
Unknown	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<b>STUDENT PRIMARY DISABILITY</b>															
Missing	1	–	–	–	–	.	.	.	.	.	.	.	.	.	.
Autism	312	495	44	57	255	248	509	48	99	149	84	484	91	42	42
Deaf/Blindness	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Developmental Delay	79	511	48	10	69	2	–	–	–	–	.	.	.	.	.
Emotional Handicapped	1	–	–	–	–	5	–	–	–	–	1	–	–	–	–

Science/Biology	Grade-Band														
	Elementary School					Middle School					High School				
	N	Scale Score		Ach. Level		N	Scale Score		Ach. Level		N	Scale Score		Ach. Level	
		Mean	SD	<3	>=3		Mean	SD	<3	>=3		Mean	SD	<3	>=3
<b>Educable Mentally Disabled</b>	260	530	41	5	255	305	546	39	15	290	92	570	79	12	80
<b>Hearing Handicapped</b>	7	-	-	-	-	4	-	-	-	-	1	-	-	-	-
<b>Learning Disability</b>	21	542	55	1	20	9	-	-	-	-	10	588	67	1	9
<b>Multiple Disable</b>	6	-	-	-	-	7	-	-	-	-	6	-	-	-	-
<b>Other Health Impaired</b>	44	503	61	7	37	56	528	66	14	42	15	514	131	6	9
<b>Orthopedically Handicapped</b>	12	506	42	2	10	16	514	78	6	10	7	-	-	-	-
<b>Profoundly Mentally Handicapped</b>	67	401	74	58	9	74	424	71	64	10	47	387	79	42	5
<b>Speech</b>	12	512	33	.	12	4	-	-	-	-	3	-	-	-	-
<b>Traumatic Brain Injury</b>	7	-	-	-	-	8	-	-	-	-	.	.	.	.	.
<b>Trainable Mental Disability</b>	205	492	40	36	169	268	498	49	101	167	154	492	71	70	84
<b>Visually Handicapped</b>	6	-	-	-	-	4	-	-	-	-	3	-	-	-	-
<b>TOTAL</b>	1040	500	56	183	857	1010	513	59	307	703	423	498	98	183	240

Exhibit G-4: Performance by Grade-Band Form and Student Age—Social Studies<sup>8</sup>

Social Studies	Grade-Band									
	Elementary School					Middle School				
	N	Scale Score		Ach. Level		N	Scale Score		Ach. Level	
		Mean	SD	<3	>=3		Mean	SD	<3	>=3
<b>STUDENT'S AGE</b>										
8	246	494	48	112	134	.	.	.	.	.
9	518	504	58	203	315	.	.	.	.	.
10	262	511	71	97	165	1	–	–	–	–
11	1	–	–	–	–	252	514	65	90	162
12	.	.	.	.	.	508	520	57	176	332
13	.	.	.	.	.	257	518	67	106	151
14	.	.	.	.	.	2	–	–	–	–
<b>STUDENT'S ETHNICITY</b>										
Unknown	.	.	.	.	.	.	.	.	.	.
Double-bubbled	.	.	.	.	.	.	.	.	.	.
Asian	15	494	43	6	9	10	515	28	2	8
African American	488	505	61	189	299	480	524	62	148	332
Hispanic	70	493	51	35	35	73	504	72	30	43
American Indian/Alaska Native	4	–	–	–	–	1	–	–	–	–
Multi-race	31	530	51	7	24	38	511	53	19	19
Other	.	.	.	.	.	.	.	.	.	.
Native Hawaiian/Other Pacific Islander	.	.	.	.	.	2	–	–	–	–
White	419	502	60	174	245	416	514	60	173	243
<b>STUDENT'S GENDER</b>										

<sup>8</sup> Note: Data marked ‘–’ are suppressed because the subgroup contains fewer than 10 students.

Social Studies	Grade-Band									
	Elementary School					Middle School				
	N	Scale Score		Ach. Level		N	Scale Score		Ach. Level	
		Mean	SD	<3	>=3		Mean	SD	<3	>=3
Female	335	501	56	138	197	337	512	64	132	205
Male	692	505	61	275	417	683	521	60	242	441
Unknown	.	.	.	.	.	.	.	.	.	.
ESL (LANGUAGE)										
Unknown	.	.	.	.	.	.	.	.	.	.
Pre-Functional	51	494	55	24	27	45	498	66	20	25
Beginner	3	–	–	–	–	3	–	–	–	–
Intermediate	.	.	.	.	.	1	–	–	–	–
Advanced	.	.	.	.	.	.	.	.	.	.
Full English Proficient	.	.	.	.	.	1	–	–	–	–
Title III First Year Exited	.	.	.	.	.	.	.	.	.	.
Title III Second+ Year Exited	.	.	.	.	.	.	.	.	.	.
English Speaker I	4	–	–	–	–	1	–	–	–	–
English Speaker II	969	504	60	386	583	968	518	61	354	614
Pre-Functional Waiver	.	.	.	.	.	1	–	–	–	–
Beginner Waiver	.	.	.	.	.	.	.	.	.	.
Intermediate Waiver	.	.	.	.	.	.	.	.	.	.
Advanced Waiver	.	.	.	.	.	.	.	.	.	.
ELIGIBLE FOR FREE OR REDUCED-PRICE LUNCH										
Free Meals	709	510	58	260	449	665	523	62	216	449
Reduced	69	505	55	25	44	91	523	62	30	61
Full-Pay Meals	249	484	63	128	121	264	503	57	128	136
Unknown	.	.	.	.	.	.	.	.	.	.
STUDENT PRIMARY DISABILITY										
Autism	309	497	47	156	153	237	514	54	104	133

Social Studies	Grade-Band									
	Elementary School					Middle School				
	N	Scale Score		Ach. Level		N	Scale Score		Ach. Level	
		Mean	SD	<3	>=3		Mean	SD	<3	>=3
Deaf/Blindness	.	.	.	.	.	.	.	.	.	.
Developmental Delay	71	509	49	26	45	1	–	–	–	–
Emotional Handicapped	2	–	–	–	–	6	–	–	–	–
Educable Mentally Disability	283	536	44	34	249	302	552	48	31	271
Hearing Handicapped	7	–	–	–	–	7	–	–	–	–
Learning Disability	23	572	59	1	22	15	554	93	2	13
Multiple Disable	7	–	–	–	–	8	–	–	–	–
Other Health Impaired	37	495	80	15	22	49	533	38	11	38
Orthopedically Handicapped	14	488	81	6	8	21	527	48	8	13
Profoundly Mentally Handicapped	58	408	70	54	4	81	423	74	72	9
Speech	11	513	45	4	7	6	–	–	–	–
Traumatic Brain Injury	5	–	–	–	–	9	–	–	–	–
Trainable Mental Disability	192	491	44	100	92	271	505	44	130	141
Visually Handicapped	8	–	–	–	–	7	–	–	–	–
<b>TOTAL</b>	1027	504	60	413	614	1020	518	62	374	646